

# **300-FF-2 Operable Unit Remedial Action Report**

For Public Release



United States  
Department of Energy

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P.O. Box 550, Richland, Washington 99352



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## ACRONYMS

BCM	bank cubic meter
BCY	bank cubic yard
bgs	below ground surface
BPA	Bonneville Power Administration
CERCLA	<i>Comprehensive Environmental Response, Compensation, and Liability Act of 1980</i>
COC	contaminant of concern
COPC	contaminant of potential concern
cpm	counts per minute
CUL	cleanup level
DOE	U.S. Department of Energy
dpm	disintegrations per minute
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
ERDF	Environmental Restoration Disposal Facility
ESD	explanation of significant difference
GPERS	Global Positioning Environmental Radiological Surveyor
HVAC	heating, ventilation, and air conditioning
K <sub>d</sub>	distribution coefficient
LDR	land disposal restricted
NPL	National Priorities List
OU	operable unit
PAH	polycyclic aromatic hydrocarbons
PCB	polychlorinated biphenyl
PNNL	Pacific Northwest National Laboratory
PRTR	Plutonium Recycle Test Reactor
RAG	remedial action goal
RAO	remedial action objective
RCRA	<i>Resource Conservation and Recovery Act of 1976</i>
RDR/RAWP	remedial design report/remedial action work plan
RLWS	Radioactive Liquid Waste Sewer
RRLWS	Retired Radioactive Liquid Waste Sewer
ROD	record of decision
RPS	retention process sewer
RTD	remove, treat, and dispose
SAP	sampling and analysis plan
TEDF	Treated Effluent Disposal Facility
TPH	total petroleum hydrocarbons
Tri-Parties	U.S. Department of Energy, Richland Operations Office, U.S. Environmental Protection Agency, and Washington State Department of Ecology
Tri-Party Agreement	<i>Hanford Federal Facility Agreement and Consent Order</i>
TSD	treatment, storage, and disposal

## Acronyms

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UIC	underground injection control
UST	underground storage tank
VOC	volatile organic compound
WAC	<i>Washington Administrative Code</i>
WATS	Waste Acid Treatment System
WCH	Washington Closure Hanford
WIDS	Waste Information Data System
WSRF	waste site reclassification form
WSTF	West Side Tank Farm



## 1.0 INTRODUCTION

The Hanford Site is a 1,502-km<sup>2</sup> (580-mi<sup>2</sup>) federal facility located in southeastern Washington State along the Columbia River (Figure 1-1). From 1943 to 1990, the primary mission of the Hanford Site was the production of nuclear materials for national defense. In 1989, the 100 Area was one of four areas at the Hanford Site placed on the National Priorities List (NPL) under the authority of the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA), as amended by the *Superfund Amendments and Reauthorization Act of 1986*. In 1990, the mission of the Hanford Site changed from producing nuclear materials to cleaning up residual radioactive and hazardous wastes.

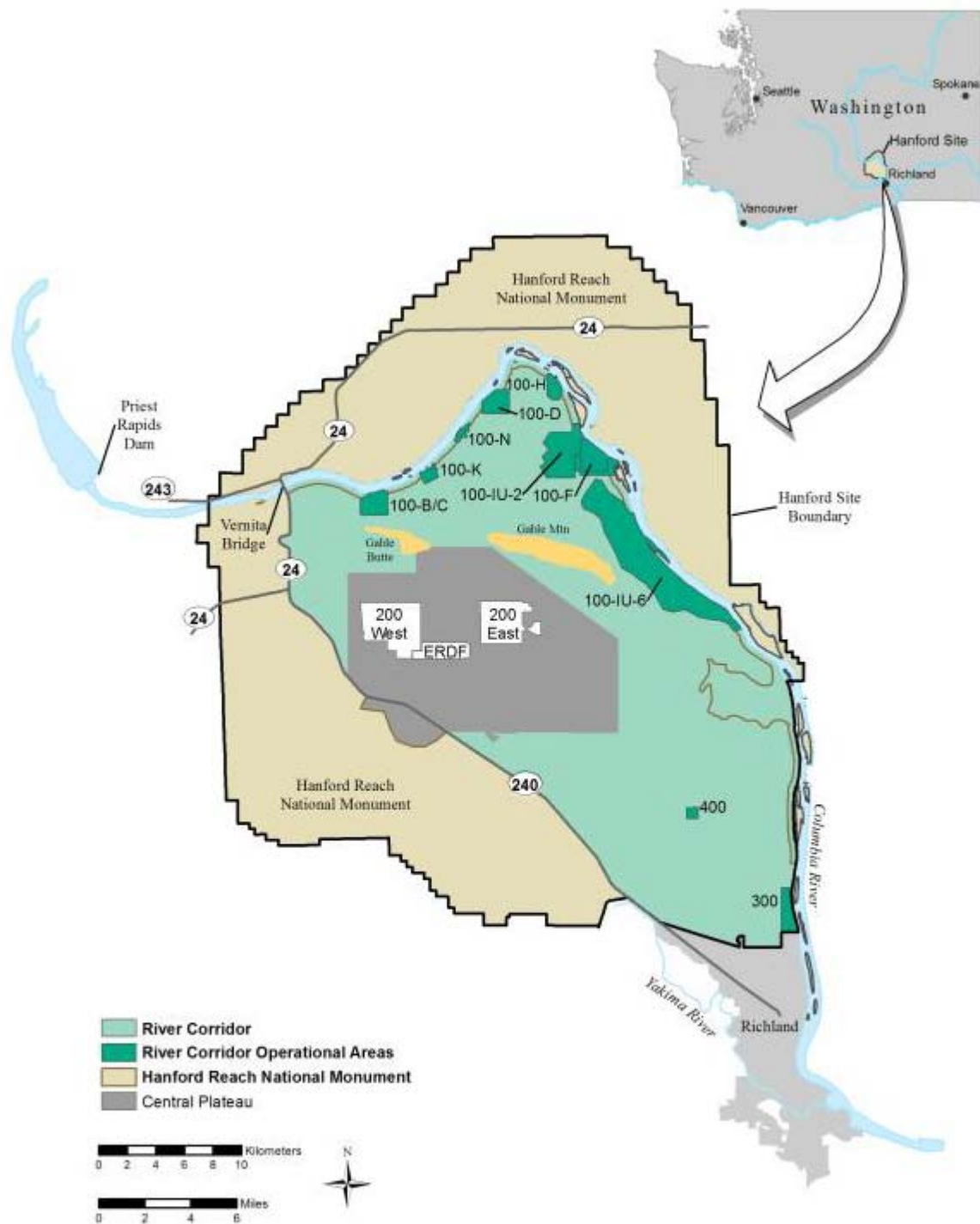
The River Corridor is a subregion of the Hanford Site that encompasses approximately 570 km<sup>2</sup> (220 mi<sup>2</sup>) (Figure 1-1). The Columbia River borders the River Corridor towards the north and east. The remaining areas of the River Corridor border the Central Plateau, Hanford Reach National Monument, and City of Richland. In 2007, the River Corridor was divided into six geographic areas, commonly referred to as decision areas, to organize the remedial investigation/feasibility study process for the River Corridor and support development of six final action records of decision (RODs). These decision areas encompass both the 100 Area and 300 Area NPL sites and include source and groundwater operable units (OUs). The six decision areas (100-BC, 100-K, 100-N, 100-D/H, 100-F/IU-2/IU-6, and 300 Areas), along with subareas referred to as segments, are shown in Figure 1-2. The 300-FF-2 OU and associated waste sites within and outside of this boundary are the focus of this report.

### 1.1 PURPOSE AND SCOPE

Remedial actions in the 300-FF-2 OU have been implemented to mitigate potential impacts from hazardous chemical and radioactive releases to the soil column as required by interim and final action RODs. This report documents the completion of final remedial actions and has been prepared in accordance with U.S. Environmental Protection Agency (EPA) guidance in OSWER Directive 9320.2-22, *Close Out Procedures for National Priorities List Sites*.

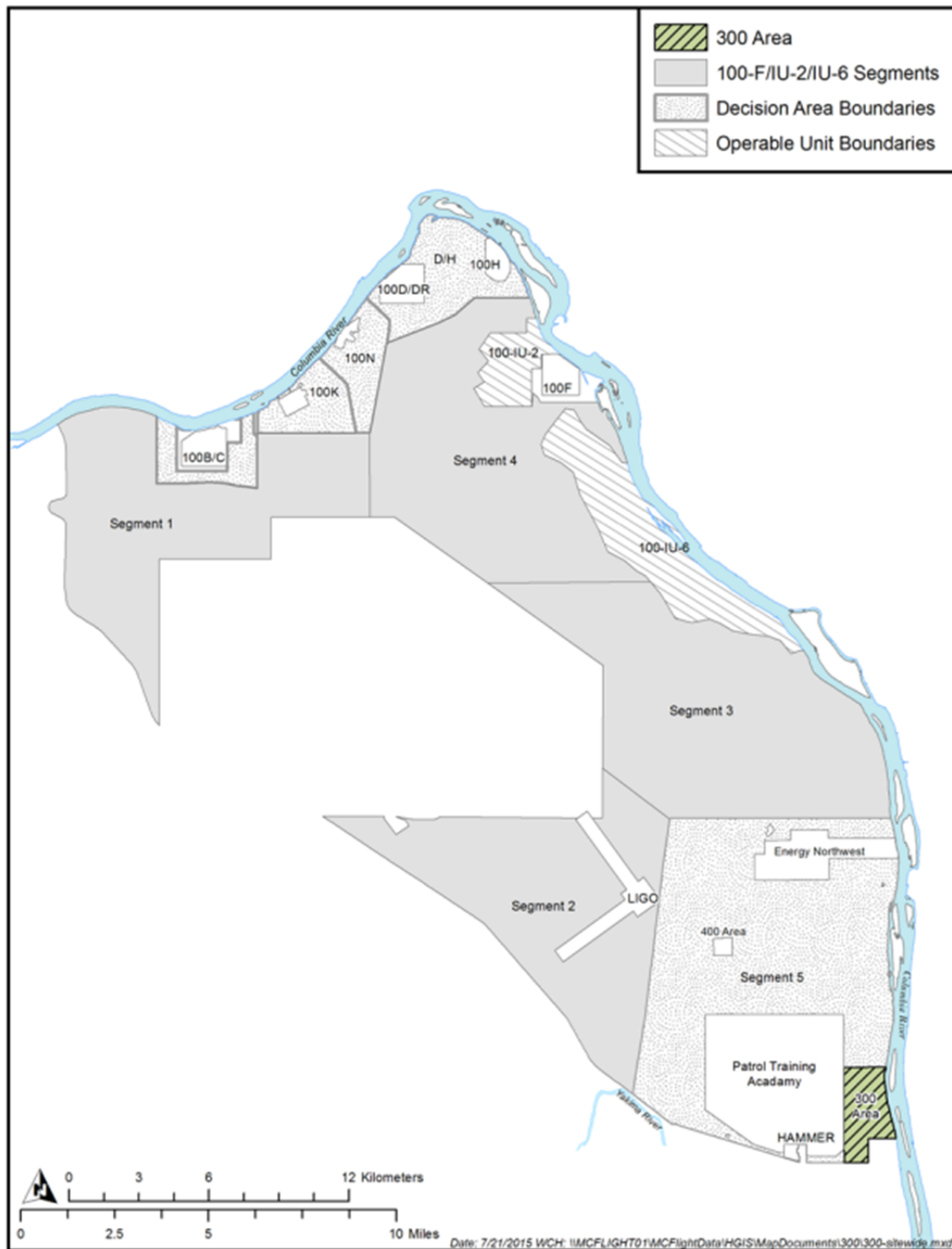
This report documents remedial action completion for source sites (e.g., contaminated soil). This report also provides a summary of the background and history of the Hanford Site (inclusive of the 300 Decision Area), construction information, and performance data.

Figure 1-1. Hanford Site Location Map.



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Figure 1-2. Decision Area and Segment Location Map.



## Introduction

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Information provided herein presents input for future decision making and evaluation of technology. This report addresses the 300-FF-2 OU waste sites identified in the following decision documents, where remedial action objectives (RAOs) and remedial action goals (RAGs) have been achieved:

- *Record of Decision for the 300-FF-1 and 300-FF-5 Operable Units, Hanford Site, Benton County, Washington* (EPA 1996)
- *Interim Action Record of Decision for the 300-FF-2 Operable Unit, Hanford Site, Benton County, Washington* (EPA 2001)
- *Explanation of Significant Difference for the 300-FF-2 Operable Unit Record of Decision, Hanford Site, Benton County, Washington* (EPA 2004)
- *Explanation of Significant Difference for the 300-FF-2 Operable Unit Interim Action Record of Decision, Hanford Site, Benton County, Washington* (EPA 2009)
- *300-FF-2 "Plug-In" Waste Sites for Fiscal Year 2010 – Annual Listing of Waste Sites Plugged into the Remove, Treat and Dispose Remedy in the 2001 Interim Action Record of Decision for the 300-FF-2* (DOE-RL 2010)
- *300 Area "Plug-In" Waste Sites for Fiscal Year 2011 – Annual Listing of Waste Sites Plugged into the Remove, Treat and Dispose Remedy in the 2001 Interim Action Record of Decision for the 300-FF-2* (DOE-RL 2011)
- *Explanation of Significant Differences, Hanford 300 Area, 300-FF-2 Operable Unit, 618-10 Burial Ground* (EPA 2011)
- *Hanford 300 Area Plug In Waste Sites for Fiscal Year 2012 Annual Listing of Waste Sites Plugged in to the Removed Treat and Dispose Remedy in the 2001 Interim Action Record of Decision for 300-FF-2* (DOE-RL 2012)
- *Hanford Site 300 Area Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1* (EPA 2013)
- *Explanation of Significant Differences for the Hanford Site 300 Area Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1* (EPA 2015)
- *Explanation of Significant Differences #2 for the Hanford Site 300 Area Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1* (EPA 2016).

Sites included in this report have also been evaluated according to RL-TPA-90-0001, *Tri-Party Agreement Handbook Management Procedures*, Guideline Number TPA-MP-14, "Maintenance of the Waste Information Data System."

## Introduction

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Remedial actions have been ongoing at the 300-FF-2 OU since 2001 under the *Interim Action Record of Decision for the 300-FF-2 Operable Unit, Hanford Site, Benton County, Washington* (EPA 2001). Approximately thirty 300-FF-2 waste sites were also remediated earlier due to their proximity to 300-FF-1 waste sites remediated under the *Record of Decision for the 300-FF-1 and 300-FF-5 Operable Units, Hanford Site, Benton County, Washington* (EPA 1996). These previous and ongoing remediation activities have been performed in accordance with the applicable revision of DOE/RL-2001-47, *Remedial Design Report/Remedial Action Work Plan for the 300 Area* (300 Area RDR/RAWP). The interim actions have established much of the document and process framework needed to successfully implement the scope of the 300 Area ROD.

The *Hanford Site 300 Area Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1, U.S. Environmental Protection Agency, Region 10, Seattle, Washington* (EPA 2013) (hereafter referred to as 300 Area Final Action ROD) and the *Integrated Remedial Design Report/Remedial Action Work Plan for the 300 Area (300-FF-1, 300-FF-2 & 300-FF-5 Operable Units)* (DOE/RL-2014-13) replaced DOE/RL-2001-47; however, remedial designs, plans, and other regulatory agreements approved under interim actions remained in effect except where the 300 Area Final Action ROD explicitly described otherwise. The *Remedial Design Report/Remedial Action Work Plan Addendum for 300-FF-2 Soils* (DOE/RL-2014-13-ADD1) contains information specific to waste site remedies for the 300-FF-2 OU and is hereafter referred to as the 300 Area RDR/RAWP.

## 1.2 HANFORD SITE

In early 1943, the U.S. Army Corps of Engineers selected the Hanford Site as the location for production reactors and chemical separation facilities for the production and purification of plutonium for use in nuclear weapons as part of the Manhattan Project, as described in ERDA-1538, *Waste Management Operations Hanford Reservation, Richland, Washington*. Production reactors were constructed in the 100 Area of the Hanford Site along the Columbia River. Separation and purification plants were constructed on the Central Plateau within the 200 Areas of the Hanford Site.

The 300 Area is adjacent to the Columbia River and approximately 1.6 km (1 mi) north of Richland city limits. The 300 Area began operations in 1943 as a fuels fabrication complex for the nuclear reactors located in the 100 Area. Most of the facilities in the area were involved in the fabrication of nuclear reactor fuel elements. In addition to the fuel manufacturing processes, technical support, service support, and research and development related to fuels fabrication also occurred within the 300 Area. In the early 1950s, the Hanford Laboratories were constructed for research and development. As the Hanford Site production reactors were shut down, fuel fabrication in the 300 Area ceased. Research and development activities have expanded over the years. The 300 Area contained a number of support facilities and other facilities necessary for research and development, environmental restoration, decontamination, and decommissioning. Approximately 150 buildings and structures were demolished within the last decade. A number of facilities with ongoing missions will remain in the 300 Area for some time.

## Introduction

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Operations in the 300 Area created both liquid and solid wastes. Prior to 1994, liquid wastes were discharged to a series of unlined ponds and process trenches north of the 300 Area. Solid waste debris generated by 300 Area operations were disposed of in several unlined burial grounds and dump sites until 1973. These burial grounds were generally located just north and west of the 300 Area complex.

The 300 Area was divided into OUs, which are groupings of individual sites based primarily on geographic area and common waste sources. The 300 Area consists of three OUs. The 300-FF-1 and the 300-FF-2 OUs address contamination at burial grounds and soil waste sites. The 300-FF-5 OU addresses groundwater contamination beneath the burial grounds and soil waste sites. Only 300-FF-2 OU is the focus of this report.

### 1.2.1 300-FF-2 Source Operable Unit

The 300-FF-2 OU is composed of waste sites that fall into four general categories: waste sites in the 300 Area industrial complex, outlying waste sites north and west of the industrial complex, general content burial grounds within and around the industrial complex, and transuranic contaminated burial grounds.

## 1.3 ENVIRONMENTAL SETTING

The Hanford Site is located within the semiarid Pasco Basin in the northern portion of the Columbia Plateau. Average annual precipitation on the Hanford Site is 16 cm (6 in.). Recharge in the 300 Area for disturbed conditions is estimated to range from 1.5 to 52 mm/yr (0.06 to 2.05 in.) (PNNL-14702, *Vadose Zone Hydrogeology Data Package for Hanford Assessments*) depending on soil type and vegetation.

The soil column (vadose zone) to groundwater underlying the 300 Area generally consists of materials belonging to the Hanford and Ringold Formations. The shallower Hanford formation consists predominantly of medium-to-dense sand and gravel, with varying amounts of silt and cobble. The underlying Ringold Formation consists primarily of dense, well-cemented gravels with sand and silt interbeds. The water table is at a depth of approximately 0 to 18 m (0 to 59 ft).

Groundwater beneath the Hanford Site is found in both an upper unconfined aquifer system and in deeper, basalt-confined aquifers. Portions of the upper, suprabasalt aquifer system are locally confined, but because the entire suprabasalt aquifer system is interconnected on a site-wide scale it is referred to as the Hanford unconfined aquifer system. The deeper, basalt-confined aquifer system is important because there is a potential for significant groundwater movement, and consequently contamination movement, between the two systems.

## 2.0 300-FF-2 AREA BACKGROUND

In anticipation of CERCLA NPL listing of the Hanford Site in 1989, the EPA, Washington State Department of Ecology (Ecology), and the U.S. Department of Energy (DOE) entered into the *Hanford Federal Facility Agreement and Consent Order* (Tri-Party Agreement) (Ecology et al. 1989). The Tri-Party Agreement is a legally binding agreement among the EPA, DOE, and Ecology (Tri-Parties) for the purposes of achieving compliance with the remedial action provisions of CERCLA and with treatment, storage, and disposal unit regulation and corrective action provisions of the *Resource Conservation and Recovery Act of 1976* (RCRA).

### 2.1 INTEGRATION WITH CERCLA CLEANUP ACTIONS

Cleanup actions in the River Corridor were performed in accordance with several interim action RODs that provided a regulatory framework, established cleanup objectives, and identified selected remedies. The 300 Area Final Action ROD replaced the interim action RODs, but remedial designs, plans, and other regulatory agreements approved under interim actions remained in effect until a new remedial design/remedial action work plan was approved by the EPA, except where the 300 Area Final Action ROD explicitly described otherwise.

### 2.2 REMEDIAL ACTION DECISIONS

In order to expedite the decision-making process to allow cleanup to begin as soon as possible, in 1991 the Tri-Parties adopted a “bias-for-action” approach for the remediation of the Hanford Site called the *Hanford Past-Practice Strategy* (DOE/RL-91-40). The “Past-Practice Strategy” streamlined the remedial investigation/feasibility study process for contaminated waste sites to allow remediation to begin earlier than is typically allowed under the traditional CERCLA process. The decision documents authorizing remediation for waste sites in the 300-FF-2 OU include the following:

- *Record of Decision for the 300-FF-1 and 300-FF-5 Operable Units, Hanford Site, Benton County, Washington*, July 1996, U.S. Environmental Protection Agency, Region 10, Seattle, Washington (EPA 1996). This ROD documented the selected remedy for the 300-FF-5 interim remedial action that involved imposing restrictions on the use of the groundwater until such time as health-based criteria are met for several contaminants. The ROD also identified the selected final remedy for the 300-FF-1 to include soil remediation for a number of sites. Approximately thirty 300-FF-2 waste sites were also remediated due to close proximity to the 300-FF-1 remediation waste sites.

## 300-FF-2 Area Background

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- *Interim Action Record of Decision for the 300-FF-2 Operable Unit, Hanford Site, Benton County, Washington*, April 2001, U.S. Environmental Protection Agency, Region 10, Seattle, Washington (EPA 2001) (300-FF-2 OU Interim Action ROD). The 300-FF-2 OU Interim Action ROD specified the selected remedy for the interim action for 40 soil contamination areas with the 300 Area Industrial Complex.
- *Explanation of Significant Difference for the 300-FF-2 Operable Unit Record of Decision May 2004*, Hanford Site, Benton County, Washington (EPA 2004). This explanation of significant difference (ESD) was required to change the industrial uranium soil cleanup level from 350 pCi/g to 267 pCi/g based on the leach study results, as required by the 300-FF-2 OU Interim Action ROD. This ESD documented the change to use distribution coefficient ( $K_d$ ) values and a revised conceptual site model that was representative of the observations made during the Pacific Northwest National Laboratory (PNNL) leach test/ $K_d$  study. Since issuing the 300-FF-2 OU Interim Action ROD, the Tri-Parties have evaluated the additional cleanup necessary to achieve unrestricted cleanup levels (CULs) for waste sites outside the “core industrial zone.” Based on the evaluation, the soil CULs for the eight outlying waste sites changed from industrial to unrestricted. The eight sites were 618-7 Burial Ground, 300 Vittrification Test Site, 618-13 Burial Ground, 600-47 Dumping Area, 316-4 Crib, 600-63 Lysimeter Facility, 600-259 Lysimeter Facility, and 618-10 Burial Ground.
- *Explanation of Significant Difference for the 300-FF-2 Operable Unit Interim Action Record of Decision*, Hanford Site, Benton County, Washington (EPA 2009). Using the “plug-in” approach provided in the 300-FF-2 OU Interim Action ROD, 14 newly discovered waste sites located in the 300-FF-2 OU were added to the 300-FF-2 OU Interim Action ROD. In addition, this ESD added two candidate waste sites to 300-FF-2 OU Interim Action ROD for characterization sampling.
- *300-FF-2 "Plug-In" Waste Sites for Fiscal Year 2010 – Annual Listing of Waste Sites Plugged into the Remove, Treat and Dispose Remedy in the 2001 Interim Action Record of Decision for the 300-FF-2* (DOE-RL 2010). The fact sheet added one waste site in the 300-FF-2 OU that required remediation.
- *300 Area "Plug-In" Waste Sites for Fiscal Year 2011 – Annual Listing of Waste Sites Plugged into the Remove, Treat and Dispose Remedy in the 2001 Interim Action Record of Decision for the 300-FF-2* (DOE-RL 2011). The fact sheet added nine waste sites in the 300-FF-2 OU that required remediation. In addition, the fact sheet listed eight candidate sites that required further evaluation.
- *Explanation of Significant Differences, Hanford 300 Area, 300-FF-2 Operable Unit, 618-10 Burial Ground* (EPA 2011). The selected remedy was modified to allow for necessary treatment of liquid waste in bottles to occur in trays within the excavation area in accordance with an approved work plan.



## 300-FF-2 Area Background

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- *Hanford 300 Area Plug In Waste Sites for Fiscal Year 2012 Annual Listing of Waste Sites Plugged in to the Removed Treat and Dispose Remedy in the 2001 Interim Action Record of Decision for 300-FF-2* (DOE-RL 2012). The fact sheet added two waste sites in the 300-FF-2 OU that required remediation. In addition, the fact sheet listed two candidate sites that required further evaluation.
- *Hanford Site 300 Area Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1* (300 Area Final Action ROD) (EPA 2013). This decision document presented the selected remedies for the 300-FF-2 and 300-FF-5 OUs and amends the selected remedy for the 300-FF-1 OU. The interim action remedy for 300-FF-5 selected in 1996 and the interim action remedy for 300-FF-2 that was selected in 2001 were replaced with this final action remedy. The remedy for 300-FF-1 selected in 1996 was amended for additional remedial action of uranium from three sites.
- *Explanation of Significant Differences for the Hanford Site 300 Area Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1* (EPA 2015). This ESD added two waste sites to Table 1 of the 300 Area Final Action ROD, one of which requires “no additional action needed to meet selected remedy requirements for 300-FF-2.”
- *Explanation of Significant Differences #2 for the Hanford Site 300 Area Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1* (EPA 2016). This ESD added two waste sites to Table 1 of the 300 Area Final Action ROD.

The decision documents described above also directed remedial action at waste sites within other River Corridor areas. However, this remedial action report only documents remedial action completed at waste sites in the 300-FF-2 OU.

Sites in the 300-FF-2 OU have a Waste Information Data System (WIDS) site classification/reclassification status of “Accepted,” “Consolidated,” “Not Accepted,” “Final No Action,” “Final Closed Out,” and “Rejected.” The following is a listing of the definitions of these terms from the *Tri-Party Agreement Handbook Management Procedures* (RL-TPA-90-0001):

- **Accepted:** A classification status indicating an assessment has been made that a WIDS site is a waste management unit.
- **Consolidated:** A reclassification status indicating a site is a duplicate of, physically located within, or adjacent to another WIDS site and will be dispositioned as part of that other site. A consolidated site has no future updates in WIDS after reclassification.
- **Final Closed Out:** A reclassification status indicating that, due to actions taken, a waste management unit meets cleanup standards specified in an ROD or an action memorandum documenting the final action cleanup decisions.

## 300-FF-2 Area Background

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- **Final No Action:** A reclassification status indicating a waste site does not require any further remedial action under RCRA Corrective Action, CERCLA, or other cleanup standards based on an assessment of quantitative data collected for the waste site.
- **Not Accepted:** A classification status indicating an assessment has been made that a WIDS site is not a waste management unit.
- **Rejected:** A reclassification status indicating a waste site does not require remediation under RCRA Corrective Action, CERCLA, or other cleanup standards based on qualitative information such as a review of historical records, photographs, drawings, walkdowns, ground-penetrating radar scans, and shallow test pits. Such investigations do not include quantitative measurements.

Regulator approval of site status is documented on a waste site reclassification form (WSRF), which is accompanied by a regulator-reviewed, site-specific informal report discussing the reasons and justification for reclassification. Site classification and reclassification status are documented in WIDS and serve as formal notification to the public of site status.

A total of 378 waste sites (not including subsites) are identified within the scope of this report (Table 2-1). The locations and classification/reclassification status of all 300-FF-2 OU sites are shown in Figures 2-1 through 2-3. In addition, there are 23 accepted waste sites (including subsites) in the 300-FF-2 OU that have a classification status of “Accepted” as shown in Table 2-2. The majority of these waste sites are associated with retained active facilities or are currently undergoing remedial actions and are not further discussed in this document.

For the purpose of completeness, two additional remedial action reports have been developed within the 300 Area Final Action ROD geographical area. The *300-FF-1 Operable Unit Remedial Action Report* (DOE/RL-2004-74, Rev. 0) was issued in June 2005 and includes the 300 Area liquid/process waste sites located in the northeastern portion of the 300 Operational Area. The *Segment 5 and 400 Area Interim Remedial Action Report* (DOE/RL-2013-34, Rev. 0) was issued in January 2014 and includes the sites located in the Segment 5 geographical area as well as sites located in the vicinity of the 400 Area.

NOTE: RCRA corrective actions associated with 300 Area treatment, storage, and disposal (TSD) sites have not been included in this report because the purpose of this report is to document CERCLA activities.

### 2.3 EXPOSURE AND LAND USE ASSUMPTIONS

The reasonably anticipated future land use is important in CERCLA remedial actions in determining the appropriate extent of remediation. Future land use affects the types and frequency of exposures to residual contamination for both human and ecological receptors, thereby influencing the amount of cleanup needed.

## 300-FF-2 Area Background

The 300 Area Industrial Complex has been an industrial site since the 1940s. This area contains laboratories operated by the Pacific Northwest National Laboratory that are expected to operate at least until 2027. A portion of 300-FF-2 is mostly uncontaminated land with a small number of waste sites. The 300 Area Industrial Complex and 618-11 Burial Ground have industrial based CULs that will achieve a level of cleanup that allows industrial use. For the remaining portion of 300-FF-2, residential-based CULs were used, which also achieve a level of cleanup that allows for industrial use.

**Table 2-1. 300-FF-2 Operable Unit Sites. (10 Pages)**

Waste Information Data System Site Code/Name	Waste Site Status
300 IFBD, 300 Area Interim Filter Backwash Disposal	Rejected
300 PHWSA, 300 Area Powerhouse HWSA, 300 Area Powerhouse Hazardous Waste Storage Area	Rejected
300 RLWS:1, Radioactive Liquid Waste Sewer	Final Closed Out
300 RLWS:2, 309 Process Sewer to 340 Complex	Final Closed Out
300 RRLWS:1, Removed Sections of the 300 Area Retired Radioactive Liquid Waste Sewer System	Final Closed Out
300 SSS, 300 Area Sanitary Sewer System	Not Accepted
300 VTS, 300 Area Vittrification Test Site, In Situ Vittrification Test Site	Final Closed Out
300-1, Old North Richland Automotive Maintenance Yard	Final No Action
300-2, Contaminated Light Water Disposal; Potential Trench Location #1	Final No Action
300-4, DOE 351 Substation Soil Contamination	Final Closed Out
300-6, 366/366A Fuel Oil Bunkers	Final Closed Out
300-7, Undocumented Solid Waste Burial Ground Adjacent to 618-8, Possible Early Burial Ground Site	Final Closed Out
300-8, Aluminum Recycle Storage Area, Aluminum Shavings Area	Final Closed Out
300-9, Possible Early Burial Ground Sites North of RR and North of 618-8, Solid Waste Burial Ground	Final Closed Out
300-10, Burial Trench West of Process Trenches	Final Closed Out
300-11, Pumphouse Underground Gasoline Tank, 382 Pumphouse UGT, 382-1	Final No Action
300-12, 325 Laboratory Diesel Fuel Tank	Not Accepted
300-13, 350 Building Release To Sanitary Sewer System	Not Accepted
300-14, 331 Building Animal Waste Tanks Pit	Rejected
300-15:2, 300 Area Process Sewer North of Apple Street	Final Closed Out
300-15:3, 300 Area Process Sewer South of Apple Street	Final Closed Out
300-15:4, 3906 North Side and 3906-B Lift Stations	Final No Action
300-15:5, 310 Retention Transfer System	Final No Action
300-15:6, 305A Process Sewer and 24-in Process Sewer Main North of Apple Street	Final Closed Out
300-16:1, Utility Pole Northwest of 314 Building	Final Closed Out
300-16:2, Utility Pole East of 314 Building	Final Closed Out
300-16:3, Utility Pole Southeast of 314 Building	Final Closed Out
300-17, 331 Building Trench, 331-D Ditch, Outfall A	Not Accepted
300-18, SCA #4, Surface Contaminated Area #4	Final Closed Out
300-21, 333 Building Underground Limestone Tank	Not Accepted
300-22, 309 Building B-Cell Cleanout Leak	Final Closed Out
300-23, PRTR Diesel Storage Tank, 309-1 UST	Closed Out
300-24, Soil Contamination at the 314 Metal Extrusion Building	Final Closed Out

**300-FF-2 Area Background****Table 2-1. 300-FF-2 Operable Unit Sites. (10 Pages)**

<b>Waste Information Data System Site Code/Name</b>	<b>Waste Site Status</b>
300-25, 324 Building	Rejected
300-26, Powerhouse Fuel Oil Spill, 384 Powerhouse #6 Fuel Oil Spill, Delivery Truck Spillage on Roads	Rejected
300-27, Soil Contamination at 329 Biophysics Laboratory	Rejected
300-28, Contamination Found Along Ginko Street, Solid Waste Site Near 303-G Building	Final Closed Out
300-29, 305-B Berm, Source Location of UPR-600-11 Contaminated Soil	Final No Action
300-30, 3705 Photography Building	Rejected
300-32, 333 Building, 333 N Fuels Manufacturing Building, New Fuel Cladding Facility, 333 Building Remaining Soils	Final Closed Out
300-33, 306W Metal Fabrication Development Building Releases	Final Closed Out
300-34, 300 Area Process Sewer Leak (found during Project L-070 excavation at manhole PS-87)	Final Closed Out
300-35, 3706A Fuel Storage Tank	Closed Out
300-36, 384 Powerhouse Oil Release to French Drain	Not Accepted
300-37, PCB Leak to Soil Adjacent to 335A	Rejected
300-39, 309 Building Ex-vessel Irradiated Fuel Storage Basin, 309 Building Irradiated Fuel Storage Basin, 309 Fuel Storage Basin	Rejected
300-40, Corrosion of Vitrified Clay Process Sewer Pipe	Final Closed Out
300-41, 306E Neutralization Tank, Underground Lime Tank and Valve Pit	Final Closed Out
300-42, 306E Fabrication and Testing Laboratory	Not Accepted
300-43, Unplanned Release Outside the 304 Building	Final Closed Out
300-45, Surface Contamination Area, Location 3: Bird Droppings Area (Southwest corner of the 316-5 process Trenches Fence Line), SCA #1	Final Closed Out
300-46, Soil Contamination and Multiple French Drains Surrounding 3706 Building	Final Closed Out
300-47, Residual Hazardous Substances Northwest of 3708 Building	Not Accepted
300-48, Thorium Oxide and Fuel Fabrication Chemical Wastes Around 3732 Building	Final Closed Out
300-53, Unplanned Release East Side of 303-G	Final Closed Out
300-55, 309 Rupture Loop Holding Tank, Rupture Loop Hold-up Tank, RLT-2, 307-D	Rejected
300-56, 306-E 90-Day Waste Accumulation Area	Rejected
300-57, 335 Building 90-Day Waste Accumulation Area	Rejected
300-58, 305B Steam Condensate Injection Well, Miscellaneous Stream #449	Rejected
300-59, 305 Building Steam Condensate, Miscellaneous Stream #417	Rejected
300-60, 303A Building Steam Condensate, Miscellaneous Stream #339, F.D. #26	Rejected
300-61, 303B Building Steam Condensate, Miscellaneous Stream #444, Injection Well #12	Rejected
300-62, 303C Building - Steam Condensate, Miscellaneous Stream #495	Rejected
300-63, 305B Building Stormwater Runoff, Miscellaneous Stream #458	Not Accepted
300-64, 303F Building Steam Condensate, Miscellaneous Stream #352	Rejected
300-65, 303J Building - Steam Condensate Mud Leg (Part of 300 Main Supply), Miscellaneous Stream #266	Rejected
300-66, 303J Building HVAC Condensate, Miscellaneous Stream #267	Rejected
300-67, Steam Condensate from 300 Area Main Steam Header, Miscellaneous Stream #414	Rejected
300-68, 305 Building - Steam Condensate, Miscellaneous Stream #451, Pit U23	Rejected
300-69, 305 Building Steam Condensate, Miscellaneous Stream #415	Rejected
300-70, 305 Building Steam Condensate, Miscellaneous Stream #416	Rejected
300-71, 306E Building - HVAC Condensate, Miscellaneous Stream #454	Rejected
300-72, 308 Building Stormwater Runoff, Miscellaneous Stream #404	Not Accepted
300-73, 308 Building Stormwater Runoff, Miscellaneous Stream #405	Not Accepted

**300-FF-2 Area Background****Table 2-1. 300-FF-2 Operable Unit Sites. (10 Pages)**

<b>Waste Information Data System Site Code/Name</b>	<b>Waste Site Status</b>
300-74, 308 Building Stormwater Runoff, Miscellaneous Stream #406	Not Accepted
300-75, 309 Building Stormwater Runoff and Chiller Water, Miscellaneous Stream #445, Injection Well #20	Rejected
300-76, 306W Building Steam Condensate, Miscellaneous Stream #418	Rejected
300-77, 309 Building Stormwater Runoff, Miscellaneous Stream #450	Not Accepted
300-78, 300 Area Main Header Steam Trap (Southwest Corner of 313 Building), Miscellaneous Stream #331	Rejected
300-79, 313 Building Stormwater Runoff, Miscellaneous Stream #457	Not Accepted
300-80, 314 Building Stormwater Runoff and Steam Condensate, Miscellaneous Stream #268	Final Closed Out
300-81, 321 Building Steam Condensate, Miscellaneous Stream #370	Consolidated
300-82, 321 Building Steam Condensate, Miscellaneous Stream #371	Consolidated
300-83, 321 Building Steam Condensate, Miscellaneous Stream #372	Consolidated
300-84, 321 Building Vent Valve on Water Line, Miscellaneous Stream #348	Consolidated
300-85, 323 Building Steam Valve Pit, Miscellaneous Stream #453	Rejected
300-86, 300 Area South Parking Lot Stormwater Runoff, Miscellaneous Stream #524	Rejected
300-87, 309 Building Stormwater Runoff, Miscellaneous Stream #679	Not Accepted
300-88, 320 Building Irrigation Line Effluent, Miscellaneous Stream #626	Rejected
300-89, 320 Building Irrigation Line Effluent, Miscellaneous Stream #627	Rejected
300-90, 320 Building Irrigation Line Effluent, Miscellaneous Stream #628	Rejected
300-91, 320 Building, Miscellaneous Stream #350	Rejected
300-92, 321 Building Stormwater Runoff, Miscellaneous Stream #680	Consolidated
300-93, 324 Building Stormwater Runoff, Miscellaneous Stream #354	Not Accepted
300-94, 324 Building Stormwater Runoff, Miscellaneous Stream #711, 300-234	Not Accepted
300-95, 324/336 Buildings Stormwater Runoff and Steam Condensate; Miscellaneous Stream #425	Rejected
300-96, 325 Building Steam Condensate, Miscellaneous Stream #707	Rejected
300-97, 325 Building Stormwater Runoff and Fire System Testing Water, Miscellaneous Stream #706	Not Accepted
300-98, 325 Building South Stairwell Drain, Miscellaneous Stream #264, 300-229	Not Accepted
300-99, 325 Building Nitrogen Tank Blowdown Miscellaneous Stream #265, Injection Well #399-3	Rejected
300-100, 325 Building Stormwater Runoff, Miscellaneous Stream #408	Not Accepted
300-101, 326 Building Stormwater Runoff and Steam Condensate, Miscellaneous Stream #409	Rejected
300-102, 328 Building Steam Condensate, Miscellaneous Stream #353	Rejected
300-103, 329 Building Stormwater Runoff, Miscellaneous Stream #422	Not Accepted
300-104, 329 Building Stormwater Runoff, Miscellaneous Stream #546	Not Accepted
300-105, 331 Building Steam Condensate, Miscellaneous Stream #513, Pit U1	Rejected
300-106, 331 Building Steam Condensate, Miscellaneous Stream #574	Rejected
300-107, 331 Building Stormwater Runoff, Miscellaneous Stream #447, Injection Well #32	Not Accepted
300-108, 331 Building Stormwater Runoff, Miscellaneous Stream #448, Injection Well #37	Not Accepted
300-109, 333 Building Stormwater Runoff, Miscellaneous Stream #455	Final Closed Out
300-110, 333 Building Stormwater Runoff, Miscellaneous Stream #456	Final Closed Out
300-111, 337 Building Stormwater Runoff, Miscellaneous Stream #516	Not Accepted
300-112, 340 P-3 Pump Pit, Retention Process Sewer Pump Pit #3 French Drain, Miscellaneous Stream #428	Rejected

**Table 2-1. 300-FF-2 Operable Unit Sites. (10 Pages)**

<b>Waste Information Data System Site Code/Name</b>	<b>Waste Site Status</b>
300-113, 340 Building Steam Condensate/ Water Heater Overflow, Miscellaneous Stream #341	Rejected
300-114, 340A Building Steam Condensate, Miscellaneous Stream #427	Rejected
300-115, 340B Building Backflow Preventer Emergency Drain, Miscellaneous Stream #426	Not Accepted
300-116, 3506A Building Steam Condensate, Miscellaneous Stream #381	Rejected
300-117, 3506A Building Steam Condensate, Miscellaneous Stream #382	Rejected
300-118, 3621D Building Steam Condensate, Miscellaneous Stream #700, Pit U-7.	Rejected
300-119, 3621D HVAC Condensate, Miscellaneous Stream #401, 3621D Air/Condensate Blowdown Drain	Rejected
300-120, 3621D Building Diesel Generator Cooling System Condensate, Miscellaneous Stream #402, 3621D Air Driven Starter Motor Discharge Drain	Rejected
300-122, 366 Building Fuel Oil Bunker Loading Station Steam Condensate, Miscellaneous Stream #344	Rejected
300-123, 366 Building Fuel Oil Bunker Loading Station Steam Condensate French Drain, Miscellaneous Stream #342	Final Closed Out
300-124, 366 Building Fuel Oil Bunker Steam Condensate, Miscellaneous Stream #653	Rejected
300-125, 3702 Building Steam Condensate, Miscellaneous Stream #346	Rejected
300-126, 3703 Building Steam Condensate, Miscellaneous Stream #431	Rejected
300-127, 3705 Building Stormwater Runoff, Miscellaneous Stream #410	Not Accepted
300-128, 3705 Building Stormwater Runoff, Miscellaneous Stream #411	Not Accepted
300-129, 3705 Building Stormwater Runoff, Miscellaneous Stream #412	Not Accepted
300-130, 3705 Building Stormwater Runoff, Miscellaneous Stream #413	Not Accepted
300-131, 3706 Fire Sprinkler System Water, Miscellaneous Stream #515	Consolidated
300-132, 3706 Building Steam Condensate, Miscellaneous Stream #368	Consolidated
300-133, 3706 Building Steam Condensate, Miscellaneous Stream #367, Injection Well #27	Consolidated
300-134, 3706 Building Steam Condensate, Miscellaneous Stream #362	Consolidated
300-135, 3706 Building Steam Condensate, Miscellaneous Stream #365	Consolidated
300-136, 3706 Building Steam Condensate, Miscellaneous Stream #366	Consolidated
300-137, 3706 Building Steam Condensate, Miscellaneous Stream #440	Consolidated
300-138, 3706 Building Steam Condensate, Miscellaneous Stream #360	Consolidated
300-139, 3706 Building Steam Condensate, Miscellaneous Stream #357	Consolidated
300-140, 3706 Building Steam Condensate, Miscellaneous Stream #356	Consolidated
300-141, 3706 Building Steam Condensate, Miscellaneous Stream #439, Injection Well #29	Consolidated
300-142, 3706 Building Steam Condensate, Miscellaneous Stream #369, Injection Well #30	Consolidated
300-143, 3706 Building Steam Condensate, Miscellaneous Stream #361	Consolidated
300-144, 3706 Building Steam Condensate, Miscellaneous Stream #358	Consolidated
300-145, 3706 Building Steam Condensate, Miscellaneous Stream #438, Injection Well #25	Consolidated
300-146, 3706 Building Stormwater Runoff, Miscellaneous Stream #364	Consolidated
300-147, 3706 Building Stormwater Runoff, Miscellaneous Stream #363	Consolidated
300-148, 3706 Building Stormwater Runoff, Miscellaneous Stream #359, Injection Well #22	Consolidated
300-149, 3706A Building Steam Condensate, Miscellaneous Stream #432, Injection Well #28	Consolidated
300-150, 3706 Building Steam Condensate, Miscellaneous Stream #430	Rejected
300-151, 3707B Building Steam Condensate, Miscellaneous Stream #327	Rejected

**300-FF-2 Area Background****Table 2-1. 300-FF-2 Operable Unit Sites. (10 Pages)**

<b>Waste Information Data System Site Code/Name</b>	<b>Waste Site Status</b>
300-152, 3707B Building Steam Condensate, Miscellaneous Stream #326, U57	Rejected
300-153, 3707B Building Steam Condensate, Miscellaneous Stream #328	Rejected
300-154, 3707B Building Steam Condensate, Miscellaneous Stream #325	Rejected
300-155, 3707C Building Steam Condensate, Miscellaneous Stream #179, Injection Well #24	Rejected
300-156, 3707C Building Steam Condensate, Miscellaneous Stream #178, Injection Well #23	Rejected
300-157, 3707C Building Steam Condensate, Miscellaneous Stream #337	Rejected
300-158, 3707C Building Steam Condensate, Miscellaneous Stream #336, F.D. #31	Rejected
300-159, 3707C Building Steam Condensate, Miscellaneous Stream #335, F.D. #4	Rejected
300-160, 3707D Building Steam Condensate, Miscellaneous Stream #443, Injection Well #10	Rejected
300-161, 3707D Building Stormwater Runoff, Miscellaneous Stream #441	Rejected
300-162, 3707D Building Stormwater Runoff, Miscellaneous Stream #442	Rejected
300-163, 3708 Building Steam Condensate, Miscellaneous Stream #423	Rejected
300-164, 3709 Building Steam Condensate, Miscellaneous Stream #338, F.D. #3	Rejected
300-165, 3709A Building Condensate, Miscellaneous Stream #347	Rejected
300-166, 3709A Building Steam Trap, Miscellaneous Stream #355	Rejected
300-167, 3711 Building Steam Condensate, Miscellaneous Stream #343	Rejected
300-168, 3711 Building Steam Condensate, Miscellaneous Stream #433	Rejected
300-169, 3712 Building Steam Condensate, Miscellaneous Stream #351	Rejected
300-170, 3712 Building Steam Condensate, Miscellaneous Stream #437	Rejected
300-171, 3713 Building Steam Condensate and Stormwater Runoff, Miscellaneous Stream #333, F.D. #7	Rejected
300-172, 3713 Building Steam Condensate, Miscellaneous Stream #435	Rejected
300-173, 3713 Building Steam Condensate, Miscellaneous Stream #512	Rejected
300-174, 3713 Building Stormwater Runoff and Steam Condensate, Miscellaneous Stream #544	Rejected
300-176, 3715 Building Steam Condensate, Miscellaneous Stream #678	Rejected
300-177, 3717 Building Steam Condensate, Miscellaneous Stream #330	Rejected
300-178, 3717 Building Steam Condensate, Miscellaneous Stream #329	Rejected
300-179, 3717 Building Steam Condensate, Miscellaneous Stream #324	Rejected
300-180, 3717 Building Stormwater Runoff, Miscellaneous Stream #545	Not Accepted
300-181, 3717 Building Steam Condensate, Miscellaneous Stream #180	Rejected
300-182, 3717B Building Steam Condensate, Miscellaneous Stream #323	Rejected
300-183, 3718 Building Steam Condensate, Miscellaneous Stream #340, F.D. #40	Rejected
300-184, 3718A Building Stormwater Runoff, Miscellaneous Stream #270	Not Accepted
300-185, 3722 Building Steam Condensate, Miscellaneous Stream #436, Injection Well #6	Rejected
300-186, 3730 Building Steam Condensate, Miscellaneous Stream #383	Rejected
300-187, 3730 Building Steam Condensate, Miscellaneous Stream #421	Rejected
300-188, 3730 Building Steam Condensate, Miscellaneous Stream #420	Rejected
300-189, 3731 Building Steam Condensate, Miscellaneous Stream #269	Rejected
300-190, 3731 Building Stormwater Runoff, Miscellaneous Stream #517	Not Accepted
300-191, 3731 Building Stormwater Runoff, Miscellaneous Stream #518	Not Accepted
300-192, 3732 Building Steam Condensate, Miscellaneous Stream #349	Rejected
300-193, 3732 Building Steam Condensate, Miscellaneous Stream #419, Injection Well #15	Rejected
300-194, 3734 Building Steam Condensate, Miscellaneous Stream #334, F.D. #8	Rejected

**Table 2-1. 300-FF-2 Operable Unit Sites. (10 Pages)**

<b>Waste Information Data System Site Code/Name</b>	<b>Waste Site Status</b>
300-195, 3734A Building Steam Condensate, Miscellaneous Stream #519	Rejected
300-196, 3745 Building Steam Condensate, Miscellaneous Stream #399	Rejected
300-197, 3745 Building Steam Condensate, Miscellaneous Stream #398, Injection Well #5	Rejected
300-198, 3745 Building Steam Condensate, Miscellaneous Stream #397, Injection Well #1	Rejected
300-199, 3745B Building Steam Condensate, Miscellaneous Stream #380	Rejected
300-200, 3745B Building Steam Condensate, Miscellaneous Stream #379	Rejected
300-201, 3762 Building Steam Condensate, Miscellaneous Stream #491, Injection Well #42	Rejected
300-202, 3765 Building HVAC Condensate, Miscellaneous Stream #345	Rejected
300-203, 377 Building Steam Condensate, Miscellaneous Stream #446, Injection Well #36	Rejected
300-204, 3790 Building Stormwater Runoff, Miscellaneous Stream #378, F.D. #19, Injection Well #19	Not Accepted
300-205, 3790 Building Stormwater Runoff, Miscellaneous Stream #377, F.D. #18, Injection Well #18	Not Accepted
300-206, 3790 Building Stormwater Runoff, Miscellaneous Stream #373	Not Accepted
300-207, 3790 Building Stormwater Runoff, Miscellaneous Stream #375, F.D. #16, Injection Well #16	Not Accepted
300-208, 3790 Building Stormwater Runoff, Miscellaneous Stream #376, F.D. #17, Injection Well #17	Not Accepted
300-209, 3790 Building Stormwater Runoff, Miscellaneous Stream #374	Not Accepted
300-210, 3790 Building Stormwater Runoff, Miscellaneous Stream #514	Not Accepted
300-211, 382 Building Steam Condensate, Miscellaneous Stream #429	Rejected
300-212, MO010 Building Steam Condensate Sump, Miscellaneous Stream #400	Rejected
300-213, West High Tank (Water Tower) Overflow and Steam Condensate, Miscellaneous Stream #332	Rejected
300-214:1, Removed Sections of the 300 Area Retention Process Sewer	Final Closed Out
300-215, 300 Area South	Rejected
300-217, 300 Area Laydown Yard	Not Accepted
300-218, 314, 314A and 314B Buildings, Engineering Development Laboratory	Final Closed Out
300-219, 300 Area Waste Acid Transfer Line	Final Closed Out
300-220, Gravel Pit #7, Pit 7	Not Accepted
300-222, 384-W Brine Pit, 384-W Salt Dissolving Pit and Brine Pump Pit	Rejected
300-223, 384 Powerhouse Fuel Oil Day Tanks #1 and #2	Closed Out
300-224, WATS and U-Bearing Piping Trench	Final Closed Out
300-225, 3790 Building Stormwater Runoff, Miscellaneous Stream #767	Not Accepted
300-226, 3709A Building Miscellaneous Stream #768, Drip Station U39	Rejected
300-227, 3709A Building Miscellaneous Stream #769, Drip Station U38	Rejected
300-228, Miscellaneous Stream #770, Drip Station U28, Steam Trap 3G-U28, HPD-TRP-026	Rejected
300-230, Steam Trap 3G-U44, HPD-TRP-29, U44, Miscellaneous Stream #771	Rejected
300-231, Vitrification Test Site Transformer Pad, Substation C3-S15	Consolidated
300-235, 3713 Building Stormwater Runoff and Steam Condensate, Miscellaneous Stream #766	Rejected
300-236, Steam Trap 3G-U45, HPD-TRP-020, U-45, Miscellaneous Stream #772	Rejected
300-237, Steam Trap HPD-TRP-010, Miscellaneous Stream #773	Rejected
300-238, Steam Trap 3G-U24, HPD-TRP-016, U-24, Miscellaneous Stream #774	Rejected
300-239, Steam Trap 3G-U26, HPD-TRP-058, U26, Miscellaneous Stream #775	Rejected



**300-FF-2 Area Background****Table 2-1. 300-FF-2 Operable Unit Sites. (10 Pages)**

<b>Waste Information Data System Site Code/Name</b>	<b>Waste Site Status</b>
300-240, 314 Building Stormwater Drain, Miscellaneous Stream #789	Not Accepted
300-241, 320 Building Irrigation Line Effluent, Miscellaneous Stream #790	Not Accepted
300-242, 325 Building Stormwater Runoff, Miscellaneous Stream #791	Not Accepted
300-243, 318 Building Stormwater Runoff, Miscellaneous Stream #792	Not Accepted
300-244, 318 Building Stormwater Runoff, Miscellaneous Stream #793	Not Accepted
300-248, 340B Steam Condensate Sump Pit	Rejected
300-249, 304 Building, Residual Rad Contamination	Final Closed Out
300-250, Valve Pit Southeast of 303A	Not Accepted
300-251, Unplanned Release Outside the 303-K Building	Final Closed Out
300-253, 384-W Original Brine Pit, 384-W Original Salt Dissolving Pit and Brine Pump Pit	Final Closed Out
300-255, 309 Tank Farm Contaminated Soil	Final Closed Out
300-256, 306E Fabrication and Testing Laboratory Releases	Final Closed Out
300-257, 309 Process Sewer To River	Final Closed Out
300-258, Abandoned Pipe Trench Between 334 Tank Farm and 306E	Final Closed Out
300-259, Contamination Area Surrounding 618-1 Burial Ground	Final Closed Out
300-260, Contaminated Soil West of 313 Building	Final No Action
300-261, 315 Filter Plant Process Sewer to River	Rejected
300-262, Contaminated Soil West of South Process Pond	Final Closed Out
300-263, 324 Building Diversion Tank	Final Closed Out
300-264, 327 Building, Postirradiation Testing Laboratory	Rejected
300-266, Soil Under 3728 Building Drain Pipe	Rejected
300-267, French Drain on Northeast Corner of 3728 Building, Miscellaneous Stream #829	Rejected
300-268, 3741 Building Foundation; Special Machine Shop; Box Storage Building Foundation	Final Closed Out
300-270, Unplanned Release at 313 Building	Final Closed Out
300-271, 324/327 Buildings 90 Day Storage Pad, HS-027	Rejected
300-272, Underground Storage Tank Near the 377 Building	Closed Out
300-273, Fuel Oil Transfer Pipeline, 366 Bunker Pipeline	Final Closed Out
300-274, Surface Debris	Final Closed Out
300-275, Potential Landfill on River Edge	Final Closed Out
300-276, 3607 Sanitary System Miscellaneous Components, 300 Area Sanitary Sewer Disposal System, 3607 Sanitary Sewer System	Final Closed Out
300-277, 300 Area Queue Contamination	Final Closed Out
300-279, 3716 Automotive Repair Building Fuel Tanks	Final No Action
300-280, Construction Debris Disposal Pit West of George Washington Way	Final Closed Out
300-281, Septic Tank Near 325 Building	Final No Action
300-282, Crib Near 3717-B Building	Rejected
300-283, Contaminated Light Water Disposal Site #2; Potential Trench Location #2	Final No Action
300-284, Sand Blasting Area Near 3221 Building	Final Closed Out
300-285, 300 Area Steam Condensate French Drains/Dry Wells, Ten French Drains and Dry Wells in 300 Area	Not Accepted
300-286, Three 300 Area Potentially Contaminated French Drain/Drywells	Final Closed Out
300-287, Transite Debris West of Route 4 South	Final Closed Out
300-288:1, Piles of Garnet Sand/Soil Mixture Within Gravel Pit 6	Final No Action
300-288:2, Undocumented disposal site within Gravel Pit 6	Final Closed Out
300-289, Stained Soil Area North of 300 Area	Final Closed Out
300-290, Radiological Debris Area East of Horn Rapids Disposal Landfill	Final No Action

**300-FF-2 Area Background****Table 2-1. 300-FF-2 Operable Unit Sites. (10 Pages)**

<b>Waste Information Data System Site Code/Name</b>	<b>Waste Site Status</b>
300-291, Garnet Sand West of 350-A Paint Shop	Final No Action
300-292, 315 Water Filter Plant Waste Pipeline Segments	Rejected
300-293:1, 300 Area Miscellaneous Pipelines - less than 2.5 ft bgs	Final No Action
300-293:2, 300 Area Miscellaneous Pipelines - greater than or equal to 2.5 ft bgs	Final No Action
300-294, Garnet Sand East of 350 Building	Final No Action
300-295, 384 Powerhouse Coal Ash Waste Pipeline Segments	Rejected
303-M SA, 303-M Storage Area, 303-M Building Storage Area	Final Closed Out
303-M UOF, 303-M Uranium Oxide Facility	Final Closed Out
307 RB, 307 Retention Basins	Rejected
309-TW-1, 309-TW Tank #1, 309 Holdup Tanks	Rejected
309-TW-2, 309-TW Tank #2, 309 Holdup Tanks	Rejected
309-TW-3, 309-TW Tank #3, 309 Holdup Tank	Rejected
309-WS-1, 309 Plutonium Recycle Test Reactor Ion Exchanger Vault, Reactor Ion Exchange Pit, PRTR Ion Exchange Vault	Rejected
309-WS-2, Rupture Loop Ion Exchange Pit, Ion Exchange Vault, Rupture Loop Annex Ion Exchange Loop Vault, RLAIX, PRTR Rupture Loop	Rejected
309-WS-3, 309 Brine Tank	Rejected
311 MT1, 311 Methanol Tank 1, 311 Tank Farm Underground Methanol Tank #1, 311-1	Final Closed Out
311 MT2, 311 Methanol Tank 2, 311 Tank Farm Underground Methanol Tank #2, 311-2	Final Closed Out
313 CRO, 313 Copper Remelt Operations, 313 Building Copper Remelt Operations	Not Accepted
313 ESSP, 313 East Side Storage Pad, 313 Building East Site Storage Pad	Final Closed Out
313 MT, 313 Methanol Tank, 313 Building Underground Methanol Storage Tank	Final Closed Out
313 URO, 313 Uranium Recovery Operations, Uranium Recovery Operations	Consolidated
315 RSDF, 315 Retired Sanitary Drain Field	Rejected
316-3, 307 Disposal Trenches, Process Water Trenches	Final Closed Out
323 TANK 1, 321 Building Underground Waste Tanks, 321 Tank Farm #3 (See Tank 323 4)	Rejected
323 TANK 2, 321 Building Underground Waste Tanks, 321 Tank Farm #3 (See 323 Tank 4)	Rejected
323 TANK 3, 321 Building Underground Waste Tanks, 321 Tank Farm #3 (See 323 Tank 4)	Rejected
323 TANK 4, 321 Building Underground Waste Tanks, 321 Tank Farm #3	Rejected
331 LSLDF, 331 LSL Drain Field, 331 Life Sciences Laboratory Drainfield	Final Closed Out
331-C HWSA, 331-C Hazardous Waste Storage Area, 331-C Low Level Radioactive Storage Area	Rejected
333 ESHTSSA, 333 East Side Heat Treat Salt Storage Area	Consolidated
333 ESHWSA, 333 East Side HWSA, 333 Building East Side Hazardous Waste Storage Area	Final Closed Out
333 LHWSA, 333 Laydown HWSA, 333 Laydown Hazardous Waste Storage Area	Consolidated
333 WSTF, 333 West Side Tank Farm, 333 West Side Waste Oil Tank, 333 West Side Uranium Bearing Acid Tanks, 333 WSWOT	Final Closed Out
335 & 336 RSDF, 335 & 336 Retired Sanitary Drain Field	Rejected
340 CHWSA, 340 Complex HWSA, 340 Complex Hazardous Waste Storage Area	Rejected
340 COMPLEX, 340 Radioactive Liquid Waste Handling Facility	Final Closed Out
350 HWSA, 350 Building Hazardous Waste Storage Area, 350-D Hazardous Waste Staging Area	Rejected
600-22, UFO Landing Site	Final No Action
600-47, Dumping Area North of 300-FF-1	Final Closed Out

**300-FF-2 Area Background****Table 2-1. 300-FF-2 Operable Unit Sites. (10 Pages)**

<b>Waste Information Data System Site Code/Name</b>	<b>Waste Site Status</b>
600-96, 618-10 Borrow Pit	Not Accepted
600-97, 618-11 Borrow Pit	Not Accepted
600-117, 300 Area Treated Effluent Disposal Facility, 310 Building	Rejected
600-210, 300 Area TEDF Outfall	Not Accepted
600-243, Petroleum Contaminated Soil Bioremediation Pad, Bioremediation Pad inside Gravel Pit #6, Pit 6, Oil Contaminated Soil	Final Closed Out
600-244, Gravel Pit #6, Pit 6	Not Accepted
600-249, Debris Within Gravel Pit 6	Rejected
600-255, 300 Area Stormwater Percolation Pond	Not Accepted
600-259:1, Grout Lysimeter Site, Grout Waste Test Facility	Final Closed Out
600-259:2, Grout Lysimeter Site, Special Waste Form Lysimeter	Final Closed Out
600-265, Unidentified Pipes Near the 618-10 Burial Ground	Not Accepted
600-290:1, Contaminated Concrete Foundation West of 618-13, Pad and Loading Dock	Final Closed Out
600-290:2, 300 West Storage Area	Final No Action
600-352-PL, Pipeline from 342 Sump to 310 Facility; 300 Area Retention/Transfer System (RTS) and Pipeline	Consolidated
600-357, Geophysical Testing Pit #2 near 618-10	Not Accepted
600-366, PNNL Geophysics Test Site West of 300 Area	Not Accepted
600-367, Burial Pit Near Little Egypt	Final Closed Out
618-1:1, 333 ESHTSSA, 333 East Side Heat Treat Salt Storage Area	Final Closed Out
618-1:2, Limestone Neutralization Pit(s), WATS Trench Neutralization Pit(s)	Final Closed Out
618-2, Solid Waste Burial Ground No. 2, 318-2	Final Closed Out
618-3, Solid Waste Burial Ground No. 3, 318-3, Burial Ground #3, Dry Waste Burial Ground No. 3	Final Closed Out
618-5, Burial Ground No. 5, Regulated Burning Ground, 318-5	Final Closed Out
618-6, Solid Waste Burial Ground #6	Rejected
618-7, Solid Waste Burial Ground No. 7, Burial Ground #7, 318-7	Final Closed Out
618-8, Solid Waste Burial Ground No. 8, 318-8, Early Solid Waste Burial Ground	Final Closed Out
618-9, 300 West Burial Ground, 318-9, Dry Waste Burial Site No. 9	Final Closed Out
618-13, 318-13, 303 Building Contaminated Soil Burial Site	Final Closed Out
3712 USSA, 3712 Uranium Scrap Storage Area, 3712 Building Uranium Scrap Storage Area, 3712 Fuels Warehouse	Final Closed Out
3713 PSHWSA, 3713 Paint Shop Hazardous Waste Satellite Area	Rejected
3713 SSHWSA, 3713 Sign Shop Hazardous Waste Satellite Area	Rejected
3746-D SR, 3746-D Silver Recovery, 3746-D Silver Recovery Process	Rejected
UPR-300-1, 316-1A, 307-340 Waste Line Leak, UN-300-1	Consolidated
UPR-300-2, Releases at the 340 Facility, UN-300-2, UN-316-2	Consolidated
UPR-300-4, UN-300-4, Contaminated Soil Beneath the 321 Building	Final Closed Out
UPR-300-5, UN-300-5, Spill at 309 Storage Basin	Final Closed Out
UPR-300-7, UN-300-7, Oil Spill at 384 Building	Final Closed Out
UPR-300-11, Underground Radioactive Liquid Line Leak, UN-300-11	Consolidated
UPR-300-13, UN-300-13, Acid Neutralization Tank Leak East of 333 Building	Consolidated
UPR-300-14, UN-300-14, Acid Leak at 334 Tank Farm	Consolidated
UPR-300-17, UN-300-17, Metal Shavings Fire	Final Closed Out
UPR-300-18, UN-300-18, Release at 321 Tank Farms	Not Accepted
UPR-300-31, UN-300-31	Not Accepted
UPR-300-38, Soil Contamination Beneath the 313 Building, 313 Slab, Demolished 313 Building Foundation	Final Closed Out
UPR-300-39, UN-300-39, Sodium Hydroxide Leak at 311 Tank Farm	Final Closed Out

**300-FF-2 Area Background****Table 2-1. 300-FF-2 Operable Unit Sites. (10 Pages)**

<b>Waste Information Data System Site Code/Name</b>	<b>Waste Site Status</b>
UPR-300-40, Acid Release at the 303-F Pipe Trench, UN-300-40, UPR-300-31, UN-300-31	Final Closed Out
UPR-300-41, 300 Area #340 Building Phosphoric Acid Spill, UN-300-41	Final Closed Out
UPR-300-42, 300 Area Powerhouse Fuel Oil Spill, UN-300-42	Final Closed Out
UPR-300-43, 300 Area Solvent Refined Coal Spill, UN-300-43	Rejected
UPR-300-44, 313 Building, Uranium Bearing Waste Etch-Acid Spill, UN-300-44	Consolidated
UPR-300-45, 303-F Building Uranium-Bearing Acid Spill, UN-300-45	Final Closed Out
UPR-300-46, Contamination North of 333 Building	Final Closed Out
UPR-600-1, Contamination Spread at 618-10 Burial Ground, UN-600-1	Consolidated
UPR-600-2, Contamination Spread at 618-10, UN-600-2	Consolidated
UPR-600-3, Contamination Spread at 618-10	Consolidated
UPR-600-4, Contamination Spread at 618-11	Consolidated
UPR-600-5, Contamination Spread at 618-11	Consolidated
UPR-600-6, Contamination Spread at 618-11	Consolidated
UPR-600-7, Contamination Spread at 618-11	Consolidated
UPR-600-8, Contamination Spread at 618-11	Consolidated
UPR-600-9, Contamination Spread at 618-11	Consolidated
UPR-600-10, Contamination Spread at 618-11	Consolidated
UPR-600-22, WPPSS Windrow Site, 600-21	Final Closed Out

**Table 2-2. Accepted Waste Sites in the 300-FF-2 Operable Unit. (3 Pages)**

<b>WIDS Site Code</b>	<b>WIDS Site Name</b>	<b>Site Background</b>
<b>Miscellaneous Remaining Pipeline and Soil Contamination Waste Sites</b>		
300 RLWS:3	Retained Sections of the Radioactive Liquid Waste Sewer and 309 Process Sewer	The site consists of those portions of the 300 Area Radioactive Liquid Waste Sewer that are being retained due to adjacent active facilities.
300 RRLWS:2	Retained Sections of the 300 Area Retired Radioactive Liquid Waste Sewer System	The site consists of those portions of the 300 Area Retired Radioactive Liquid Waste Sewer System that are being retained due to their proximity to adjacent active facilities.
300-5	300 Area Fire Station Fuel Tanks, 3709A Fire Station	The site consists of contaminated soils associated with two former underground fuel tanks, the pump island, and ancillary piping.
300-15:1	Active and Retained Portions of 300 Area Process Sewer	The subsite consists of those portions of the 300-15, 300 Area Process Sewer waste site that are being retained and are potentially active.
300-121	3621D Building Stormwater Runoff, Miscellaneous Stream #403, Injection Well #26	The site is a 91-cm (36-in.)-diameter french drain and associated piping from the floor drains in the 3621-D Building. Retained utility (overhead power line) interferes with proposed removal actions.
300-214:2	Retained Sections of the 300 Area Retention Process Sewer	The site consists of those portions of the 300-214, 300 Area Retention Process Sewer that are being retained due to their proximity to adjacent active facilities.
300-265	Pipe Trench Between 324 and 325 Buildings	The site is an underground stainless-steel waste transfer line encased within fiberglass-reinforced epoxy pipe that runs between the 324 and 325 Buildings.

**Table 2-2. Accepted Waste Sites in the 300-FF-2 Operable Unit. (3 Pages)**

<b>WIDS Site Code</b>	<b>WIDS Site Name</b>	<b>Site Background</b>
400-37	Fuel Oil Tank South of 4732-B	The site is an underground fuel oil tank located near the southeast corner of the 4732-B Building.
400-38	Fuel Oil Tank East of 4722-A Building Pad	The site is an underground fuel tank that supported 4722-A Building.
600-393	Potential Battery Components Debris Area	The waste site is a debris area that contains potential battery components located north of Horn Rapids Road.
600-403	Thorium Contamination Found Near 618-13	The site is a posted radiation zone that measures approximately 4.6 by 4.6 m (15 ft by 15 ft).
<b>Waste Site Associated With the 324 Building</b>		
300-296	Soil Contamination Under 324 Building B-Cell	The site consists of contaminated soil beneath the B-Cell of the 324 Building.
<b>Waste Sites Associated With the 325 Building</b>		
300-175	3714 Building Steam Condensate, Miscellaneous Stream #434	The drain is located on the west side of the 3714 Building and consists of a 36-cm (14.2-in.)-diameter concrete french drain with a metal cover. In close proximity to the 325 Building.
UPR-300-10	Contamination Under 325 Bldg., UN-300-10	The site was an unplanned release of liquid waste from dissolution of highly radioactive samples (including irradiated reactor fuels) to the soil beneath the northwest corner of the 325 Building.
UPR-300-12	Contaminated Soil Beneath the 325 Building	The site was an unplanned release to the soil under the floor on the east side of the 325-A Building.
UPR-300-48	325 Building Basement Topsy Pit	The site is radioactively contaminated soil that occurred as a result of a release through a crack in the process sewer drain pipe elbow.
<b>Waste Sites in the 331 Building</b>		
300-269	331-A Virology Laboratory Foundation	The site is a rectangular concrete building foundation of the former 331-A Building. The building was originally used for biological research to investigate radiation effects of animals. Air conditioner units are currently installed on the concrete foundation to support the adjacent 331 facility.
331 LSLT1	331 LSL Trench 1, 331 Life Sciences Laboratory Trench #1	The 331 Leaching Trenches disposed of sanitary and animal wastes to the soil column. The units were located underneath or near the east end of the 331 Building. The north leaching trench has been arbitrarily designated as the 331 LSLT1 unit.
331 LSLT2	331 LSL Trench 2, 331 Life Sciences Laboratory Trench #2	The 331 Leaching Trenches disposed of sanitary and animal wastes to the soil column. The units were located underneath or near the east end of the 331 Building. The south leaching trench has been arbitrarily designated as the 331 LSLT2 unit.
<b>Waste Sites in the 618-10 Area</b>		
618-10	300 North Solid Waste Burial Ground, 318-10	The site consists of 12 trenches and 94 vertical pipe units that operated from 1954 to 1963. It received a variety of waste from the 300 Area operations ranging from low-level activity waste placed in the burial trenches to intermediate- and high-level wastes remotely deposited into the vertical pipe units.

**Table 2-2. Accepted Waste Sites in the 300-FF-2 Operable Unit. (3 Pages)**

<b>WIDS Site Code</b>	<b>WIDS Site Name</b>	<b>Site Background</b>
316-4	321 Cribs, 300 North Cribs, 316-N-1, 616-4	The crib consists of two bottomless tanks buried 3 m (10 ft) below grade resting on gravel strata. The site received hexone-bearing uranium wastes and limited amounts of other uranium-bearing wastes from the 321 Building.
600-63	300-N Lysimeter Area, Recharge Study Site, Buried Waste Test Facility, Vadose Zone Field Study – 300 North, VZFS300N	The site consists of six drainage lysimeters 7.6 m (25 ft) deep, and two weighing lysimeters 1.5 m (5 ft) deep. Trace amounts of cobalt-60 and tritium were placed in the lysimeters to study recharge and radionuclide migration.
<b>Waste Site in the 618-11 Area</b>		
618-11	Y Burial Ground, 318-11, 300 Wye Burial Ground	The site consists of 3 "V"-shaped trenches, 2 large diameter caissons, and 50 vertical pipe storage units. The burial ground received a broad spectrum of low- to high-level dry wastes, including fission products and plutonium from the 300 Area operations.

WIDS = Waste Information Data System.



Figure 2-1. Map of 300-FF-2 Operable Unit WIDS Sites - North.

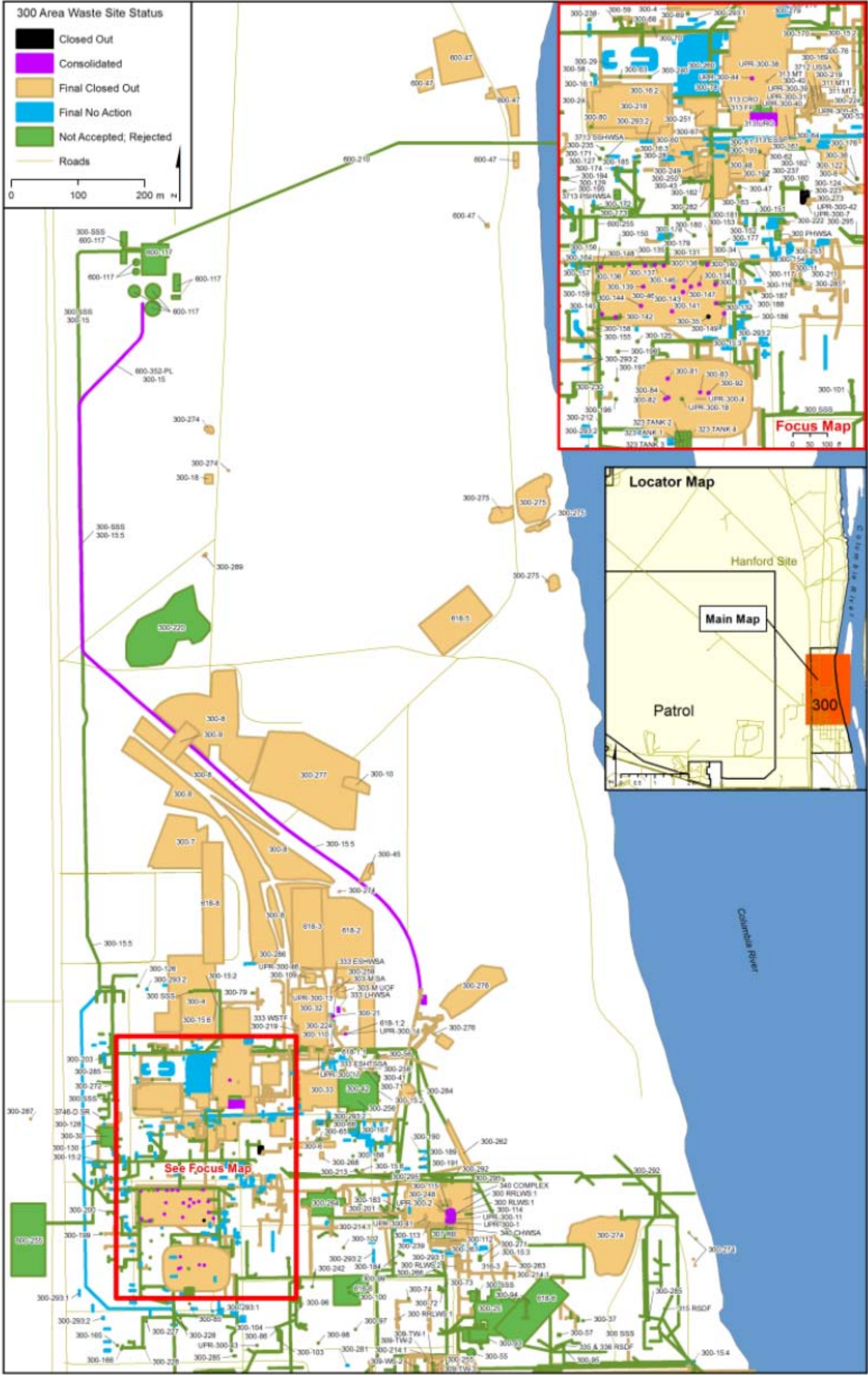
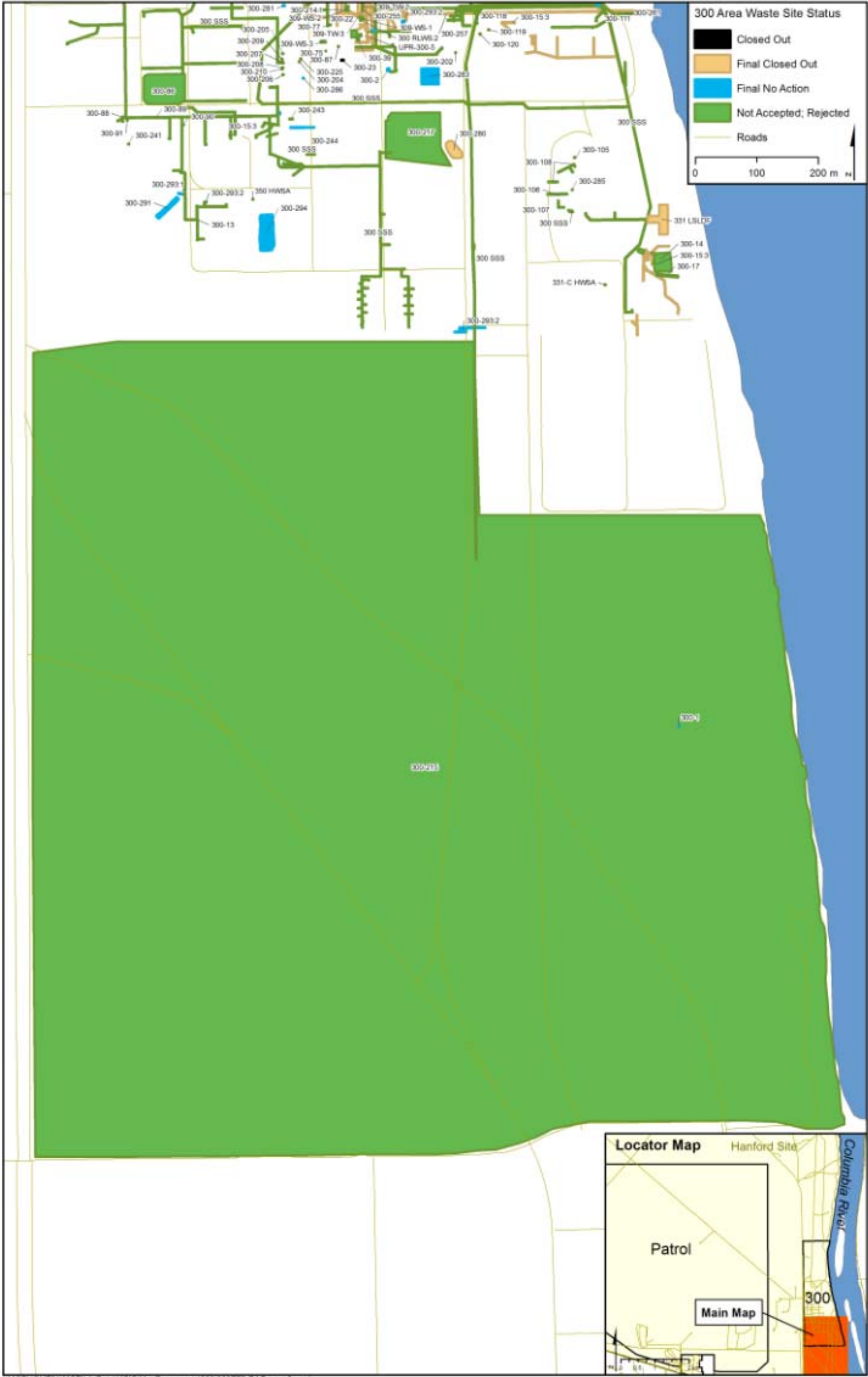
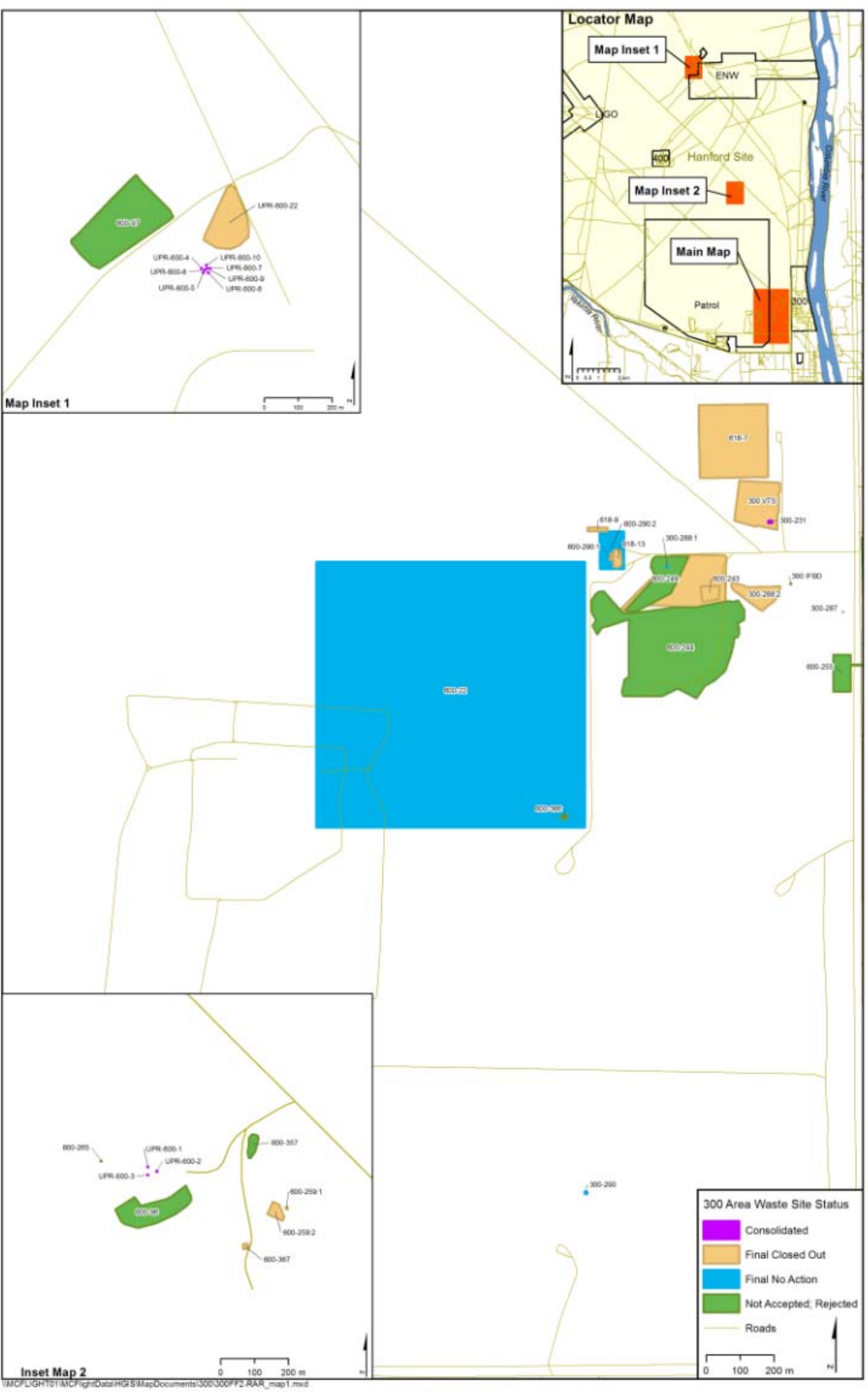


Figure 2-2. Map of 300-FF-2 Operable Unit WIDS Sites - South.





**Figure 2-3. Map of 300-FF-2 Operable Unit WIDS Sites – West, 618-10, and 618-11.**





## 300-FF-2 Area Background

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### 2.4 REMEDIAL ACTION REQUIREMENTS

Implementation of remedial actions at the 300-FF-2 OU waste sites were done in accordance with interim action and final action RODs that required implementation of the selected cleanup remedy to address actual or threatened releases.

The major components of the selected remedy (i.e., remove, treat, dispose [RTD]) include the following:

- Planning and implementing remedial action according to an approved remedial design report/remedial action work plan document
- Stockpiling uncontaminated overburden and use for backfilling excavations when feasible
- Removing contaminated soil, structures, and associated debris
- Disposing of contaminated materials at the Hanford Site's Environmental Restoration Disposal Facility (ERDF), or other disposal facilities approved in advance by EPA
- Treating, as necessary, to meet waste acceptance criteria at an acceptable disposal facility
- Recontouring and backfilling of excavated areas and restoring viable habitat by revegetating the impacted area
- Identifying institutional controls to prevent exposure to contamination by limiting land or resource uses if needed
- Demonstrating that residual contamination concentrations are protective of humans and the environment.

The RAOs were met by implementing the selected remedy with an “observational approach.” The observational approach consisted of two main steps: compilation of available data and the “characterize-and-remediate-in-one-step” methodology. The first step relied on recorded information from historical process operations and information from investigations addressing the nature and extent of contamination. This initial step of characterization was a prerequisite task to field remediation and was used to develop an initial understanding of site conditions. The second methodology consisted of site excavation, field screening, and in-process sampling for contaminants at sites where remedial action and cleanup goals had been selected. Remediation proceeded until it was demonstrated through a combination of field screening, in-process sampling, and verification sampling that cleanup goals were achieved.

The RTD remedy for the waste sites in the 300-FF-2 OU involved removing clean and contaminated soils, debris, and anomalous waste present within waste site boundaries. The materials exposed during excavation were monitored for radiological and hazardous chemical constituents as defined in DOE/RL-2001-48, *300 Area Remedial Action Sampling and Analysis*

*Plan* (300 Area SAP). During remediation of known dump sites or burial grounds, extra measures were taken for materials to be sorted for waste disposition. During excavation, soils were monitored for both radiological and chemical constituents. Activities were guided during excavation using data obtained from in situ analytical systems or in-process sampling using quick turnaround laboratory analyses working concurrently with excavation.

Upon completion of remediation at each waste site, verification sampling and analyses were performed to verify attainment of cleanup criteria for all contaminants of concern (COCs) and contaminants of potential concern (COPCs). Statistical and focused sampling approaches were used in accordance with the applicable sampling and analysis plan. If analytical results indicated that cleanup criteria have not been achieved, then excavation resumed with appropriate analyses as guidance. Remediation proceeded until it was demonstrated through a combination of field screening, in-process sampling, and verification sampling that cleanup goals were achieved.

The 300 Area Final Action ROD specified the RAOs and associated CULs that define the extent to which the waste sites require cleanup to protect human health and the environment. Specific RAOs associated with the selected remedy and the method for achieving the objectives through remedial actions are summarized in Table 2-3.

**Table 2-3. 300 Area Source Operable Unit Cleanup Objectives. (2 Pages)**

Remedial Action Objective	Compliance Methods
Prevent COCs migrating and/or leaching through soil that will result in groundwater concentrations above CULs for protection of groundwater, and of surface water concentrations above CULs for the protection of surface water at locations where groundwater discharges to surface water.	Protection such that contaminant levels in soil after remediation did not result in an adverse impact to groundwater that exceeded any nonzero maximum contaminant level goals under the <i>Safe Drinking Water Act of 1974</i> or Method B cleanup levels under WAC 173-340, “Model Toxics Control Act – Cleanup.”  Protection such that contaminant levels in the soil after remediation did not result in an impact to groundwater and the Columbia River that exceeded the ambient water quality criteria under the <i>Clean Water Act of 1977</i> for protection of fish or Method B cleanup levels under WAC 173-340, “Model Toxics Control Act – Cleanup.” Because there are no ambient water quality criteria for radionuclides, maximum contaminant levels from national primary drinking water standards were used.  The protection of receptors (aquatic species, with emphasis on salmon) in surface waters was achieved by reducing or eliminating further contaminant loadings to groundwater such that receptors at the groundwater discharge in the Columbia River were not subjected to any additional adverse risks.

**Table 2-3. 300 Area Source Operable Unit Cleanup Objectives. (2 Pages)**

Remedial Action Objective	Compliance Methods
Prevent human exposure to the upper 4.6 m (15 ft) of soil, structures, and debris contaminated with COCs at concentrations above residential scenario-based CULs in areas outside both the 300 Area Industrial Complex and 618-11 waste site.	Cleanup levels for nonradionuclides in the 300 Area industrial land use scenario are based on WAC 173-340-745(5), which assumed that the exposure pathway for residual contamination will be from ingestion of contaminated soil. Soil cleanup levels were calculated using the equations provided by WAC 173-340-745(5), Method C for carcinogens and noncarcinogens. For carcinogens, a lifetime cancer risk goal of $1 \times 10^{-5}$ was achieved. For noncarcinogens, a hazard quotient of 1 was achieved.
Prevent human exposure to the upper 4.6 m (15 ft) of soil, structures, and debris contaminated with COCs at concentrations above CULs for industrial use in the 300 Area Industrial Complex and 618-11 waste site.	
Manage direct exposure to contaminated soils deeper than 4.6 m (15 ft) to prevent an unacceptable risk to human health and the environment.	Attain individual COC cleanup levels. Direct contact cleanup levels for nonradionuclides are based on risk calculations provided in the Washington State's "Model Toxics Control Act – Cleanup" procedures. Direct contact cleanup levels for radionuclides are calculated based on an excess lifetime cancer risk of $1 \times 10^{-4}$ or a radiological dose of 15 mrem/yr. For each radionuclide, the lower of the risk or dose-based calculations was used as the cleanup level.
Prevent ecological receptors from direct exposure to the upper 4.6 m (15 ft) of soil, structures and debris contaminated with COCs at concentrations above CULs.	Achieved through excavation to Washington State's WAC 173-340, "Model Toxics Control Act – Cleanup," levels for organic and inorganic chemical constituents in soil to support unrestricted (residential) and/or industrial use. Achieved human health total radiological dose standards of less than 15 mrem/yr above background for radionuclides.

COC = contaminant of concern

CUL = cleanup levels

WAC = Washington Administrative Code

## 2.5 REMEDIAL DESIGN SUMMARY

The general design and approach for remediation of the 300-FF-2 OU waste sites is documented in the 300 Area RDR/RAWP (DOE/RL-2014-13-ADD1). The 300 Area RDR/RAWP was prepared and maintained to implement the 300 Area Final Action ROD.



### 3.0 CHRONOLOGY OF EVENTS

A chronology of major events associated with the implementation of interim and final remedial action for the sites within the 300-FF-2 OU is presented in Table 3-1.

**Table 3-1. 300-FF-2 Operable Unit Chronology. (9 Pages)**

Year	Action
1996	Closed Out: 300-23 August
1997	None
1998	Rejected: 300-14 September 300-58 September 300-62 September 300-65 September 300-66 September 300-76 September 300-85 September 300-88 September 300-89 September 300-90 September 300-91 September 300-96 September 300-99 September 300-101 September 300-105 September 300-106 September 331-C HWSA September UPR-300-43 September 300-186 September 300-187 September 300-188 September 300-189 September 300-196 September 300-197 September 300-198 September 300-199 September 300-200 September 300-201 September 300-203 September 300-212 September 618-6 October 300-59 December 300-67 December 300-68 December

**Table 3-1. 300-FF-2 Operable Unit Chronology. (9 Pages)**

Year	Action
	300-69 December
	300-70 December
	300-71 December
	300-86 December
	300-102 December
	300-116 December
	300-117 December
	300-118 December
	300-119 December
	300-120 December
	300-122 December
	300-124 December
	300-125 December
	300-126 December
	300-171 December
	300-172 December
	300-173 December
	300-174 December
	300-176 December
	300-177 December
	300-178 December
	300-179 December
	300-181 December
	300-182 December
	300-183 December
	300-185 December
	300-192 December
	300-193 December
	300-194 December
	300-195 December
	300-202 December
	300-211 December
	300-213 December
	300-150 December
	300-151 December
	300-152 December
	300-153 December
	300-154 December
	300-155 December
	300-156 December
	300-157 December
	300-158 December
	300-159 December
	300-160 December
	300-161 December
	300-162 December



**Table 3-1. 300-FF-2 Operable Unit Chronology. (9 Pages)**

Year	Action
	<div>300-163 December</div> <div>300-164 December</div> <div>300-165 December</div> <div>300-166 December</div> <div>300-167 December</div> <div>300-168 December</div>
1999	<div>Closed Out:</div> <div>300-35 February</div> <div>Final Closed Out:</div> <div>313 MT February</div> <div>UPR-300-7 August</div> <div>Consolidated:</div> <div>300-92 January</div> <div>300-82 January</div> <div>300-83 January</div> <div>300-84 January</div> <div>300-131 January</div> <div>300-132 January</div> <div>300-133 January</div> <div>300-134 January</div> <div>300-135 January</div> <div>300-136 January</div> <div>300-137 January</div> <div>300-138 January</div> <div>300-139 January</div> <div>300-140 January</div> <div>300-141 January</div> <div>300-142 January</div> <div>300-143 January</div> <div>300-144 January</div> <div>300-145 January</div> <div>300-146 January</div> <div>300-147 January</div> <div>300-148 January</div> <div>300-149 January</div> <div>300-81 February</div> <div>333 ESHTSSA February</div> <div>333 LHWSA February</div> <div>UPR-300-13 February</div> <div>UPR-300-14 February</div> <div>UPR-300-44 February</div> <div>UPR-600-1 February</div> <div>UPR-600-2 February</div> <div>UPR-600-3 February</div> <div>UPR-600-4 February</div> <div>UPR-600-5 February</div>

**Table 3-1. 300-FF-2 Operable Unit Chronology. (9 Pages)**

Year	Action	
	UPR-600-6	February
	UPR-600-7	February
	UPR-600-8	February
	UPR-600-9	February
	UPR-600-10	February
	Rejected:	
	300 IFBD	January
	300 PHWSA	January
	300-26	January
	300-30	January
	300-56	January
	300-61	January
	300-64	January
	300-95	January
	300-112	January
	300-113	January
	300-114	January
	300-169	January
	315 RSDF	January
	340 CHWSA	January
	3713 PSHWSA	January
	3713 SSHWSA	January
	300-75	January
	300-215	January
	300-27	February
	300-55	February
	300-60	February
	300-78	February
	300-170	February
	335 & 336 RSDF	February
	350 HWSA	February
	600-249	April
	300-226	May
	300-227	May
	300-228	May
	300-230	May
	300-235	May
	300-236	May
	300-237	May
	300-238	May
	300-239	May
	300-248	May
	300-261	May
2000	Rejected:	
	300-271	September

## Chronology of Events

**Table 3-1. 300-FF-2 Operable Unit Chronology. (9 Pages)**

Year	Action
2002	<p>Closed Out:</p> <p>300-272 November</p> <p>Rejected:</p> <p>300-222 March</p>
2001	<i>Interim Action Record of Decision for the 300-FF-2 Operable Unit, Hanford Site, Benton County, Washington (EPA 2001)</i>
2004	<i>Explanation of Significant Differences for 300-FF-2 Operable Unit Record of Decision May 2004, Hanford Site, Benton County, Washington (EPA 2004)</i>
2006	<i>Second CERCLA Five Year Review Report for Hanford Site, Hanford Site, Benton County, Washington (DOE/RL-2006-20)</i>
2009	<p><i>Remedial Design Report/Remedial Action Work Plan for the 300 Area (DOE/RL-2001-47, Rev. 3)</i></p> <p><i>Explanation of Significant Differences for the 300-FF-2 Operable Unit Interim Action Record of Decision, Hanford Site, Benton County, Washington (EPA 2009)</i></p>
2010	<p><i>300 Area Remedial Investigation/Feasibility Study Sampling and Analysis Plan for the 300-FF-1, 300-FF-2 and 300-FF-5 Operable Units, Rev. 0 (DOE-RL-2009-45)</i></p> <p>Final Closed Out:</p> <p>618-1:1 June</p> <p>618-1:2 June</p>
2011	<p>Final Closed Out:</p> <p>300-276 December</p> <p>3712 USSA August</p> <p>Final No Action:</p> <p>300-293:1 June</p> <p>Rejected:</p> <p>300-282 June</p>
2012	<p><i>2012 Fact Sheet – Hanford 300 Area “Plug-In” Waste Sites for Fiscal Year 2012 - Annual Listing of Waste Sites Plugged into the Remove, Treat and Dispose Remedy in the 2001 Interim Action Record of Decision for 300-FF-2 (DOE-RL 2012)</i></p> <p><i>Hanford Site Third CERCLA Five Year Review Report, Hanford Site, Benton County, Washington (DOE/RL-2011-56)</i></p> <p>Final Closed Out:</p> <p>300-40 April</p> <p>UPR-300-39 April</p> <p>UPR-300-40 April</p> <p>UPR-300-45 April</p> <p>Final No Action:</p> <p>300-279 July</p> <p>300-281 July</p> <p>300-283 July</p> <p>300-293:2 July</p> <p>600-290:2 July</p>

**Table 3-1. 300-FF-2 Operable Unit Chronology. (9 Pages)**

Year	Action
	<p>Rejected:</p> <p>300-292 May</p> <p>300-295 May</p>
2013	<p><i>Remedial Investigation/Feasibility Study for the 300-FF-1, 300-FF-2 and 300-FF-5 Operable Units (Units 1-4) (DOE/RL-2010-99)</i></p> <p><i>Remedial Investigation /Feasibility Study for the 300-FF-1, 300-FF-2 and 300-FF-5 Operable Unit Addendum (DOE/RL-2010-99-ADD1)</i></p> <p><i>Hanford Site 300 Area Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1 (EPA 2013).</i></p> <p>Closed Out:</p> <p>300-223 July</p> <p>Final Closed Out:</p> <p>300-32 March</p> <p>Consolidated:</p> <p>300-231 August</p> <p>313 URO August</p> <p>Rejected:</p> <p>323 TANK 1 July</p> <p>323 TANK 2 July</p> <p>323 TANK 3 July</p> <p>323 TANK 4 July</p> <p>300-37 August</p> <p>300-39 August</p> <p>300-57 August</p> <p>300-264 August</p> <p>307 RB August</p> <p>309-TW-1 August</p> <p>309-TW-2 August</p> <p>309-TW-3 August</p> <p>309-WS-1 August</p> <p>309-WS-2 August</p> <p>309-WS-3 August</p> <p>600-117 August</p>
2014	<p><i>Remedial Design Report/Remedial Action Work Plan for 300-FF-2 Soils (DOE/RL-2014-13-ADD1)</i></p> <p>Final Closed Out:</p> <p>300 VTS February</p> <p>300-8 February</p> <p>300-10 February</p> <p>300-18 February</p>

**Table 3-1. 300-FF-2 Operable Unit Chronology. (9 Pages)**

Year	Action
	300-33 February
	300-41 February
	300-45 February
	300-53 February
	300-109 February
	300-110 February
	300-256 February
	300-259 February
	300-275 February
	303-M SA February
	303-M UOF February
	311 MT1 February
	311 MT2 February
	333 ESHWSA February
	600-47 February
	600-243 February
	600-259:1 February
	600-259:2 February
	600-290:1 February
	618-5 February
	618-7 February
	618-8 February
	618-9 February
	618-13 February
	UPR-300-17 February
	UPR-300-41 February
	UPR-300-46 February
	300-253 March
	300-262 March
	331 LSLDF March
	300-6 May
	300-16:1 May
	300-16:2 May
	300-16:3 May
	300-24 May
	300-28 May
	300-43 May
	300-46 May
	300-48 May
	300-80 May
	300-123 May
	300-218 May
	300-219 May
	300-224 May
	300-249 May
	300-251 May

**Table 3-1. 300-FF-2 Operable Unit Chronology. (9 Pages)**

Year	Action
	300-257 May 300-258 May 300-268 May 300-270 May 300-273 May 300-274 May 313 ESSP May 333 WSTF May UPR-300-4 May UPR-300-38 May UPR-300-42 May 300-287 November 300-284 December Consolidated: 600-352-PL January UPR-300-1 October UPR-300-2 October UPR-300-11 October Final No Action: 300-2 May 300-29 February 300-260 March 300-286 May 300-288:1 December 300-291 December 600-22 February
2015	<i>Explanation of Significant Differences for 300-FF-2 and 300-FF-5 and Record of Decision (ROD)/Amendment for 300-FF-1, Hanford Site, Benton County, Washington (EPA 2015)</i> Final Closed Out: 300-9 May 300-289 May 300-7 June 300-280 July 340 COMPLEX July 300-4 July 600-367 August 618-2 August 618-3 August UPR-300-5 August 300-22 August 300-255 August UPR-600-22 August 300-15:6 September 300-34 September 300-263 September

**Table 3-1. 300-FF-2 Operable Unit Chronology. (9 Pages)**

Year	Action
	316-3 September 300 RLWS:1 September 300 RLWS:2 September 300 RRLWS:1 September 300-15:3 September 300-214:1 September 300-15:2 October 300-277 December Final No Action: 300-11 January 300-294 January 300-290 January 300-15:5 May 300-15:4 July Rejected: 300-25 July
2016	<i>Explanation of Significant Differences#2 for the 300 Area Record of Decision for 300-FF-2 and 300-FF-5 and Record of Decision Amendment for 300-FF-1 (EPA 2016)</i> Final Closed Out: 300-288:2 August

TBD = to be determined





## 4.0 CONSTRUCTION ACTIVITY SUMMARY

Field operations supporting remedial actions in the 300-FF-2 OU began in 2001 and are still ongoing in 2016. The work was performed under several contracts. The cleanup actions have resulted in the disposal of 1,930,100 metric tons (2,127,571 US tons) of contaminated soil and debris at ERDF through July 2016. Summaries of the remedial action approach and waste disposal activities for each waste site are presented in Tables 4-1 and 4-2, respectively. Table 4-3 identifies sites that were not accepted or were rejected as waste sites. Detailed information about each waste site and related construction activities is presented in the following subsections.

**Table 4-1. Remedial Action Approach. (5 Pages)**

WIDS Site Code	Site Type	WIDS Site Name and Aliases	Excavation Approach
300 RLWS:1	Radioactive process sewer	Radioactive Liquid Waste Sewer	Direct load
300 RLWS:2	Radioactive process sewer	309 Process Sewer to 340 Complex	Direct load
300 RRLWS:1	Radioactive process sewer	Removed Sections of the 300 Area Retired Radioactive Liquid Waste Sewer System	Direct load
300 VTS	Process unit/plant	300 Area Vitrification Test Site, In-Situ Vitrification (ISV) Test Site	Direct load
300-4	Unplanned release	DOE 351 Substation Soil Contamination	Direct load
300-6	Storage tank	366/366A Fuel Oil Bunkers	Direct load
300-7	Burial ground	Undocumented Solid Waste Burial Ground Adjacent to 618-8, Possible Early Burial Ground Site	Direct load
300-8	Dumping area	Aluminum Recycle Storage Area, Aluminum Shavings Area	Direct load <sup>a</sup>
300-9	Burial ground	Possible Early Burial Ground Sites North of RR and North of 618-8, Solid Waste Burial Ground	Direct load
300-10	Burial ground	Burial Trench West of Process Trenches	Direct load
300-15:2	Process sewer	300 Area Process Sewer North of Apple Street	Direct load
300-15:3	Process sewer	300 Area Process Sewer South of Apple Street	Direct load
300-15:6	Process sewer	305A Process Sewer and 24-in Process Sewer Main North of Apple Street	Direct load
300-16:1	Unplanned release	Utility Pole Northwest of 314 Building	Direct load
300-16:2	Unplanned release	Utility Pole East of 314 Building	Direct load
300-16:3	Unplanned release	Utility Pole Southeast of 314 Building	Direct load
300-18	Dumping area	SCA #4, Surface Contaminated Area #4	Direct load <sup>a</sup>
300-22	Unplanned release	309 Building B-Cell Cleanout Leak	Direct load
300-24	Unplanned release	Soil Contamination at the 314 Metal Extrusion Building	Direct load
300-28	Unplanned release	Contamination Found Along Ginko Street, Solid Waste Site Near 303-G Building	Direct load

**Construction Activity Summary****Table 4-1. Remedial Action Approach. (5 Pages)**

<b>WIDS Site Code</b>	<b>Site Type</b>	<b>WIDS Site Name and Aliases</b>	<b>Excavation Approach</b>
300-32	Fabrication shop	333 Building, 333 N Fuels Manufacturing Building, New Fuel Cladding Facility, 333 Building Remaining Soils	Direct load
300-33	Unplanned release	306W Metal Fabrication Development Building Releases	Direct load
300-34	Unplanned release	300 Area Process Sewer Leak (Found During Project L-070 Excavation at Manhole PS-87)	Direct load
300-40	Unplanned release	Corrosion of Vitriified Clay Process Sewer Pipe	Direct load <sup>a</sup>
300-41	Neutralization tank	306E Neutralization Tank, Underground Lime Tank and Valve Pit	Direct load
300-43	Unplanned release	Unplanned Release Outside the 304 Building	Direct load
300-45	Unplanned release	Surface Contamination Area, Location 3: Bird Droppings Area (Southwest Corner of the 316-5 Process Trenches Fence Line), SCA #1	Direct load
300-46	Unplanned release	Soil Contamination and Multiple French Drains Surrounding 3706 Building	Direct load
300-48	Unplanned release	Thorium Oxide and Fuel Fabrication Chemical Wastes Around 3732 Building	Direct load
300-80	French drain	314 Building Stormwater Runoff and Steam Condensate, Miscellaneous Stream #268	Direct load
300-109	Injection/reverse well	333 Building Stormwater Runoff, Miscellaneous Stream #455	Excavation, stockpile, loadout
300-110	Injection/reverse well	333 Building Stormwater Runoff, Miscellaneous Stream #456	Excavation, sort, treatment, loadout
300-123	French drain	366 Building Fuel Oil Bunker Loading Station Steam Condensate French Drain, Miscellaneous Stream #342	Direct load
300-214:1	Radioactive process sewer	Removed Sections of the 300 Area Retention Process Sewer	Direct load
300-218	Fabrication shop	314, 314A and 314B Buildings, Engineering Development Laboratory	Direct load
300-219	Process sewer	300 Area Waste Acid Transfer Line	Direct load <sup>a</sup>
300-223	Storage tank	384 Powerhouse Fuel Oil Day Tanks #1 and #2	Excavation, treat, no disposal
300-224	Trench	WATS and U-Bearing Piping Trench	Direct load <sup>a</sup>
300-249	Process unit/plant	304 Building, Residual Rad Contamination	Direct load
300-251	Unplanned release	Unplanned Release Outside the 303-K Building	Direct load
300-253	Sump	384-W Original Brine Pit, 384-W Original Salt Dissolving Pit and Brine Pump Pit	<sup>b</sup>
300-255	Unplanned release	309 Tank Farm Contaminated Soil	Direct load
300-256	Unplanned release	306E Fabrication and Testing Laboratory Releases	Direct load
300-258	Trench	Abandoned Pipe Trench Between 334 Tank Farm and 306E	Direct load <sup>a</sup>

**Construction Activity Summary****Table 4-1. Remedial Action Approach. (5 Pages)**

<b>WIDS Site Code</b>	<b>Site Type</b>	<b>WIDS Site Name and Aliases</b>	<b>Excavation Approach</b>
300-259	Unplanned release	Contamination Area Surrounding 618-1 Burial Ground	Direct load
300-262	Unplanned release	Contaminated Soil West of South Process Pond	Direct load
300-263	Catch tank	324 Building Diversion Tank	Direct load
300-268	Foundation	3741 Building Foundation; Special Machine Shop; Box Storage Building Foundation	Direct load
300-270	Unplanned release	Unplanned Release at 313 Building	Direct load
300-273	Product piping	Fuel Oil Transfer Pipeline, 366 Bunker Pipeline	Direct load
300-274	Dumping area	Surface Debris	Direct load
300-275	Sanitary landfill	Potential Landfill on River Edge	Direct load
300-276	Sanitary sewer	3607 Sanitary System Miscellaneous Components, 300 Area Sanitary Sewer Disposal System, 3607 Sanitary Sewer System	Direct load
300-277	Unplanned release	300 Area Queue Contamination	Direct load
300-280	Dumping area	Construction Debris Disposal Pit West of George Washington Way	Direct load
300-284	Unplanned release	Sand Blasting Area Near 3221 Building	Direct load
300-287	Dumping area	Transite Debris West of Route 4 South	Direct load
300-288:2	Dumping area	Undocumented Disposal Site Within Gravel Pit 6	Direct load
300-289	Unplanned release	Stained Soil Area North of 300 Area	Direct load
303-M SA	Storage	303-M Storage Area, 303-M Building Storage Area	Excavation, sort, treatment, loadout
303-M UOF	Process unit/plant	303-M Uranium Oxide Facility	Excavation, sort, treatment, loadout
313 ESSP	Storage	313 East Side Storage Pad, 313 Building East Site Storage Pad	Direct load
316-3	Trench	307 Disposal Trenches, Process Water Trenches	Direct load
333 ESHWSA	Storage	333 East Side HWSA, 333 Building East Side Hazardous Waste Storage Area	Excavation, sort, treatment, loadout
333 WSTF	Storage tank	333 West Side Tank Farm, 333 West Side Waste Oil Tank, 333 West Side Uranium Bearing Acid Tanks, 333 WSWOT	Direct load <sup>a</sup>
340 COMPLEX	Storage tank	340 Radioactive Liquid Waste Handling Facility	Direct load
600-47	Dumping area	Dumping Area North of 300-FF-1	Excavation, stockpile, loadout
600-243	Surface impoundment	Petroleum Contaminated Soil Bioremediation Pad, Bioremediation Pad inside Gravel Pit #6, Pit 6, Oil Contaminated Soil	Direct load
600-259	Experiment/test site	Inactive Lysimeter Site East End, Special Waste Form Lysimeter, Grout Waste Test Facility	Excavation, stockpile, loadout
600-290:1	Loading dock	Contaminated Concrete Foundation West of 618-13, Pad and Loading Dock	Direct load
600-367	Burial ground	Burial Pit Near Little Egypt	Direct load
618-1:1	Storage	333 ESHTSSA, 333 East Side Heat Treat Salt Storage Area	Excavation, sort, treatment, loadout

**Table 4-1. Remedial Action Approach. (5 Pages)**

<b>WIDS Site Code</b>	<b>Site Type</b>	<b>WIDS Site Name and Aliases</b>	<b>Excavation Approach</b>
618-1:2	Neutralization tank	Limestone Neutralization Pit(s), WATS Trench Neutralization Pit(s)	Excavation, sort, treatment, loadout
618-2	Burial ground	Solid Waste Burial Ground No. 2, 318-2	Excavation, stockpile, sort, loadout
618-3	Burial ground	Solid Waste Burial Ground No. 3, 318-3, Burial Ground #3, Dry Waste Burial Ground No. 3	Excavation, stockpile, sort, loadout
618-5	Burial ground	Burial Ground No. 5, Regulated Burning Ground, 318-5	Excavation, stockpile, sort, loadout
618-7	Burial ground	Solid Waste Burial Ground No. 7, Burial Ground #7, 318-7	Excavation, treatment, disposal
618-8	Burial ground	Solid Waste Burial Ground No. 8, 318-8, Early Solid Waste Burial Ground	Excavation, stockpile, sort, loadout
618-9	Burial ground	300 West Burial Ground, 318-9, Dry Waste Burial Site No. 9	Excavation, sort, loadout <sup>a</sup>
618-13	Burial ground	318-13, 303 Building Contaminated Soil Burial Site	Direct load
3712 USSA	Storage	3712 Uranium Scrap Storage Area, 3712 Building Uranium Scrap Storage Area, 3712 Fuels Warehouse	Direct load
UPR-300-4	Unplanned release	UN-300-4, Contaminated Soil Beneath the 321 Building	Direct load <sup>a</sup>
UPR-300-5	Unplanned release	UN-300-5, Spill at 309 Storage Basin	Direct load
UPR-300-7	Unplanned release	UN-300-7, Oil Spill at 384 Building	Direct load
UPR-300-17	Unplanned release	UN-300-17, Metal Shavings Fire	Direct load <sup>a</sup>
UPR-300-38	Unplanned release	Soil Contamination Beneath the 313 Building, 313 Slab, Demolished 313 Building Foundation	Direct load
UPR-300-39	Unplanned release	UN-300-39, Sodium Hydroxide Leak at 311 Tank Farm	Direct load <sup>a</sup>
UPR-300-40	Unplanned release	Acid Release at the 303-F Pipe Trench, UN-300-40, UPR-300-31, UN-300-31	Direct load <sup>a</sup>
UPR-300-41	Unplanned release	300 Area #340 Building Phosphoric Acid Spill, UN-300-41	Direct load
UPR-300-42	Unplanned release	300 Area Powerhouse Fuel Oil Spill, UN-300-42	Direct load
UPR-300-45	Unplanned release	303-F Building Uranium-Bearing Acid Spill, UN-300-45	Direct load <sup>a</sup>
UPR-300-46	Unplanned release	Contamination North of 333 Building	Excavation, stockpile, loadout

## Construction Activity Summary

**Table 4-1. Remedial Action Approach. (5 Pages)**

WIDS Site Code	Site Type	WIDS Site Name and Aliases	Excavation Approach
UPR-600-22	Unplanned release	WPPSS Windrow Site, 600-21	Direct load

<sup>a</sup> Information was not available. The excavation approach used during waste site remediation was assumed based on analogous waste site approaches, remedial action descriptions, and/or photographs of the remedial actions.

<sup>b</sup> Removed as part of building demolition activities

DOE = U.S. Department of Energy

TBD = to be determined.

WIDS = Waste Information Data System.

**Table 4-2. Environmental Restoration Disposal Facility Waste Disposal Summary for the 300-FF-2 Operable Unit. (5 Pages)**

WIDS Site Code	Site Type	Mass Disposed to ERDF (metric tons) <sup>a, b</sup>
300 RLWS:1, Radioactive Liquid Waste Sewer	Radioactive process sewer	20,133
300 RLWS:2, 309 Process Sewer to 340 Complex	Radioactive process sewer	Included in 300 RLWS:1
300 RRLWS:1, Removed Sections of the 300 Area Retired Radioactive Liquid Waste Sewer System	Radioactive process sewer	232
300 VTS, 300 Area Vitrification Test Site, In Situ Vitrification (ISV) Test Site	Process unit/plant	10 <sup>c</sup>
300-4, DOE 351 Substation Soil Contamination	Unplanned release	24,421
300-6, 366/366A Fuel Oil Bunkers	Storage tank	76,146
300-7, Undocumented Solid Waste Burial Ground Adjacent to 618-8, Possible Early Burial Ground Site	Burial ground	17,253
300-8, Aluminum Recycle Storage Area, Aluminum Shavings Area	Dumping area	39,750
300-9, Possible Early Burial Ground Sites North of RR and North of 618-8, Solid Waste Burial Ground	Burial ground	8,521
300-10, Burial Trench West of Process Trenches	Burial ground	1,812
300-15:2, 300 Area Process Sewer North of Apple Street	Process sewer	97,928
300-15:3, 300 Area Process Sewer South of Apple Street	Process sewer	161,383
300-15:6, 305A Process Sewer and 24-in Process Sewer Main North of Apple Street	Process sewer	33,124
300-16:1, Utility Pole Northwest of 314 Building	Unplanned release	Minimal quantity
300-16:2, Utility Pole East of 314 Building	Unplanned release	14,995
300-16:3, Utility Pole Southeast of 314 Building	Unplanned release	6,382
300-18, SCA #4, Surface Contaminated Area #4	Dumping area	392
300-22, 309 Building B-Cell Cleanout Leak	Unplanned release	171,083
300-23, PRTR Diesel Storage Tank, 309-1 UST	Storage tank	None
300-24, Soil Contamination at the 314 Metal Extrusion Building	Unplanned release	Included with 300-16:2

**Table 4-2. Environmental Restoration Disposal Facility Waste Disposal  
Summary for the 300-FF-2 Operable Unit. (5 Pages)**

WIDS Site Code	Site Type	Mass Disposed to ERDF (metric tons) <sup>a, b</sup>
300-28, Contamination Found Along Ginko Street, Solid Waste Site Near 303-G Building	Unplanned release	Included with 300-16:3
300-32, 333 Building, 333 N Fuels Manufacturing Building, New Fuel Cladding Facility, 333 Building Remaining Soils	Fabrication shop	872
300-33, 306W Metal Fabrication Development Building Releases	Unplanned release	38,185
300-34, 300 Area Process Sewer Leak (found during Project L-070 excavation at manhole PS-87)	Unplanned release	Included with 300-15:3
300-35, 3706A Fuel Storage Tank	Storage tank	None
300-40, Corrosion of Vitrified Clay Process Sewer Pipe	Unplanned release	1,995
300-41, 306E Neutralization Tank, Underground Lime Tank and Valve Pit	Neutralization tank	Included with 600-33
300-43, Unplanned Release Outside the 304 Building	Unplanned release	Included with 300-16:3
300-45, Surface Contamination Area, Location 3: Bird Droppings Area (Southwest Corner of the 316-5 Process Trenches Fence Line), SCA #1	Unplanned release	204
300-46, Soil Contamination and Multiple French Drains Surrounding 3706 Building	Unplanned release	14,115
300-48, Thorium Oxide and Fuel Fabrication Chemical Wastes Around 3732 Building	Unplanned release	Included with 300-16:3
300-53, Unplanned Release East Side of 303-G	Unplanned release	None
300-80, 314 Building Stormwater Runoff and Steam Condensate, Miscellaneous Stream #268	French drain	Included with 300-16:2
300-109, 333 Building Stormwater Runoff, Miscellaneous Stream #455	Injection/reverse well	712
300-110, 333 Building Stormwater Runoff, Miscellaneous Stream #456	Injection/reverse well	Included with 618-1
300-123, 366 Building Fuel Oil Bunker Loading Station Steam Condensate French Drain, Miscellaneous Stream #342	French drain	Included with 300-6
300-214:1, Removed Sections of the 300 Area Retention Process Sewer	Radioactive process sewer	12,358
300-218, 314, 314A and 314B Buildings, Engineering Development Laboratory	Fabrication shop	Included with 300-16:2
300-219, 300 Area Waste Acid Transfer Line	Process sewer	1,185
300-223, 384 Powerhouse Fuel Oil Day Tanks #1 and #2	Storage tank	None – contaminated soil bioremediated
300-224, WATS and U-Bearing Piping Trench	Trench	Included with 300-219
300-249, 304 Building, Residual Rad Contamination	Process unit/plant	Included with 300-16:3
300-251, Unplanned Release Outside the 303-K Building	Unplanned release	1,347
300-253, 384-W Original Brine Pit, 384-W Original Salt Dissolving Pit and Brine Pump Pit	Sump	Removed with 384 Bldg. demolition

**Table 4-2. Environmental Restoration Disposal Facility Waste Disposal  
Summary for the 300-FF-2 Operable Unit. (5 Pages)**

WIDS Site Code	Site Type	Mass Disposed to ERDF (metric tons) <sup>a, b</sup>
300-255, 309 Tank Farm Contaminated Soil	Unplanned release	Included with 300-22
300-256, 306E Fabrication and Testing Laboratory Releases	Unplanned release	Included with 600-33
300-258, Abandoned Pipe Trench Between 334 Tank Farm and 306E	Trench	631
300-259, Contamination Area Surrounding 618-1 Burial Ground	Unplanned release	6,600
300-262, Contaminated Soil West of South Process Pond	Unplanned release	Included with 316-1 (300-FF-1)
300-263, 324 Building Diversion Tank	Catch tank	3,973
300-268, 3741 Building Foundation; Special Machine Shop; Box Storage Building Foundation	Foundation	Included with 300-6
300-270, Unplanned Release at 313 Building	Unplanned release	87.6
300-272, Underground Storage Tank Near the 377 Building	Storage tank	None
300-273, Fuel Oil Transfer Pipeline, 366 Bunker Pipeline	Product piping	Included with 300-6
300-274, Surface Debris	Dumping area	5,103
300-275, Potential Landfill on River Edge	Sanitary landfill	2,754
300-276, 3607 Sanitary System Miscellaneous Components, 300 Area Sanitary Sewer Disposal System, 3607 Sanitary Sewer System	Sanitary sewer	4,879
300-277, 300 Area Queue Contamination	Unplanned release	22,509
300-280, Construction Debris Disposal Pit West of George Washington Way	Dumping area	20,472
300-284, Sand Blasting Area Near 3221 Building	Unplanned release	929
300-287, Transite Debris West of Route 4 South	Dumping area	Minimal quantity (<2 BCM)
300-288:2, Undocumented Disposal Site Within Gravel Pit 6	Dumping area	455,956
300-289, Stained Soil Area North of 300 Area	Unplanned release	3,784
303-M SA, 303-M Storage Area, 303-M Building Storage Area	Storage	Included with 618-1
303-M UOF, 303-M Uranium Oxide Facility	Process unit/plant	Included with 618-1
311 MT1, 311 Methanol Tank 1, 311 Tank Farm Underground Methanol Tank #1, 311-1	Storage tank	None
311 MT2, 311 Methanol Tank 2, 311 Tank Farm Underground Methanol Tank #2, 311-2	Storage tank	None
313 ESSP, 313 East Side Storage Pad, 313 Building East Site Storage Pad	Storage	418
313 MT, 313 Methanol Tank, 313 Building Underground Methanol Storage Tank	Storage tank	None
316-3, 307 Disposal Trenches, Process Water Trenches	Trench	148,964

**Construction Activity Summary****Table 4-2. Environmental Restoration Disposal Facility Waste Disposal  
Summary for the 300-FF-2 Operable Unit. (5 Pages)**

WIDS Site Code	Site Type	Mass Disposed to ERDF (metric tons) <sup>a, b</sup>
331 LSLDF, 331 LSL Drain Field, 331 Life Sciences Laboratory Drainfield	Drain/tile field	None
333 ESHWSA, 333 East Side HWSA, 333 Building East Side Hazardous Waste Storage Area	Storage	Included with 618-1
333 WSTF, 333 West Side Tank Farm, 333 West Side Waste Oil Tank, 333 West Side Uranium Bearing Acid Tanks, 333 WSWOT	Storage tank	88
340 COMPLEX, 340 Radioactive Liquid Waste Handling Facility	Storage tank	89,514
600-47, Dumping Area North of 300-FF-1	Dumping area	2,159
600-243, Petroleum Contaminated Soil Bioremediation Pad, Bioremediation Pad inside Gravel Pit #6, Pit 6, Oil Contaminated Soil	Surface impoundment	4,673
600-259, Inactive Lysimeter Site East End, Special Waste Form Lysimeter, Grout Waste Test Facility	Experiment/test site	950
600-290:1, Contaminated Concrete Foundation West of 618-13, Pad and Loading Dock	Loading dock	Included with 618-13
600-367, Burial Pit Near Little Egypt	Burial ground	1,773
618-1:1, 333 ESHTSSA, 333 East Side Heat Treat Salt Storage Area	Storage	47,332
618-1:2, Limestone Neutralization Pit(s), WATS Trench Neutralization Pit(s)	Neutralization tank	Included with 618-1:1
618-2, Solid Waste Burial Ground No. 2, 318-2	Burial ground	71,203
618-3, Solid Waste Burial Ground No. 3, 318-3, Burial Ground #3, Dry Waste Burial Ground No. 3	Burial ground	30, 878
618-5, Burial Ground No. 5, Regulated Burning Ground, 318-5	Burial ground	46,346
618-7, Solid Waste Burial Ground No. 7, Burial Ground #7, 318-7	Burial ground	160,920
618-8, Solid Waste Burial Ground No. 8, 318-8, Early Solid Waste Burial Ground	Burial ground	6,462
618-9, 300 West Burial Ground, 318-9, Dry Waste Burial Site No. 9	Burial ground	NA
618-13, 318-13, 303 Building Contaminated Soil Burial Site	Burial ground	4,742
3712 USSA, 3712 Uranium Scrap Storage Area, 3712 Building Uranium Scrap Storage Area, 3712 Fuels Warehouse	Storage	2,167
UPR-300-4, UN-300-4, Contaminated Soil Beneath the 321 Building	Unplanned release	48,537
UPR-300-5, UN-300-5, Spill at 309 Storage Basin	Unplanned release	Included with 300-22
UPR-300-7, UN-300-7, Oil Spill at 384 Building	Unplanned release	Included with 316-2 (300-FF-1)
UPR-300-17, UN-300-17, Metal Shavings Fire	Unplanned release	445



**Table 4-2. Environmental Restoration Disposal Facility Waste Disposal Summary for the 300-FF-2 Operable Unit. (5 Pages)**

WIDS Site Code	Site Type	Mass Disposed to ERDF (metric tons) <sup>a, b</sup>
UPR-300-38, Soil Contamination Beneath the 313 Building, 313 Slab, Demolished 313 Building Foundation	Unplanned release	33,297
UPR-300-39, UN-300-39, Sodium Hydroxide Leak at 311 Tank Farm	Unplanned release	Included with 300-40
UPR-300-40, Acid Release at the 303-F Pipe Trench, UN-300-40, UPR-300-31, UN-300-31	Unplanned release	Included with 300-40
UPR-300-41, 300 Area #340 Building Phosphoric Acid Spill, UN-300-41	Unplanned release	NA
UPR-300-42, 300 Area Powerhouse Fuel Oil Spill, UN-300-42	Unplanned release	Included with 300-6
UPR-300-45, 303-F Building Uranium-Bearing Acid Spill, UN-300-45	Unplanned release	Included with 300-40
UPR-300-46, Contamination North of 333 Building	Unplanned release	164
UPR-600-22, WPPSS Windrow Site, 600-21	Unplanned release	88
<b>Total</b>		<b>1,930,100 metric tons</b>

<sup>a</sup> Mass from some sites converted to metric tons from bank cubic meters by multiplying with a factor of 2.19.

<sup>b</sup> Comingled waste associated with specific removal action activities could be included with the mass quantities.

<sup>c</sup> A total of 5,218 metric tons of debris was sent to Pit 9 for disposal.

ERDF = Environmental Restoration Disposal Facility

NA = quantities were not available.

WIDS = Waste Information Data System

**Table 4-3. Not Accepted and Rejected Waste Sites in the 300 Area. (10 Pages)**

WIDS Site Code	WIDS Site Name	Waste Site Reclassification Form	Reclassification Date	Reclassification Status
300 IFBD	300 Area Interim Filter Backwash Disposal	98-220	01/27/1999	Rejected
300 PHWSA	300 Area Powerhouse HWSA, 300 Area Powerhouse Hazardous Waste Storage Area	98-216	01/27/1999	Rejected
300 SSS	300 Area Sanitary Sewer System	--	--	Not Accepted
300-12	325 Laboratory Diesel Fuel Tank	--	--	Not Accepted
300-13	350 Building Release To Sanitary Sewer System	--	--	Not Accepted
300-14	331 Building Animal Waste Tanks Pit	98-077	09/22/1998	Rejected
300-17	331 Building Trench, 331-D Ditch, Outfall A	--	--	Not Accepted
300-21	333 Building Underground Limestone Tank	--	--	Not Accepted
300-25	324 Building	2015-051	07/10/2015	Rejected
300-26	Powerhouse Fuel Oil Spill, 384 Powerhouse #6 Fuel Oil Spill, Delivery Truck Spillage on Roads	98-251	01/27/1999	Rejected

**Construction Activity Summary****Table 4-3. Not Accepted and Rejected Waste Sites in the 300 Area. (10 Pages)**

<b>WIDS Site Code</b>	<b>WIDS Site Name</b>	<b>Waste Site Reclassification Form</b>	<b>Reclassification Date</b>	<b>Reclassification Status</b>
300-27	Soil Contamination at 329 Biophysics Laboratory	99-002	02/12/1999	Rejected
300-30	3705 Photography Building	99-010	01/27/1999	Rejected
300-36	384 Powerhouse Oil Release to French Drain	--	--	Not Accepted
300-37	PCB Leak to Soil Adjacent to 335A	2013-108	08/15/2013	Rejected
300-39	309 Building Ex-vessel Irradiated Fuel Storage Basin, 309 Building Irradiated Fuel Storage Basin, 309 Fuel Storage Basin	2013-096	08/13/2013	Rejected
300-42	306E Fabrication and Testing Laboratory	--	--	Not Accepted
300-47	Residual Hazardous Substances Northwest of 3708 Building	--	--	Not Accepted
300-55	309 Rupture Loop Holding Tank, Rupture Loop Hold-up Tank, RLT-2, 307-D	99-009	02/24/1999	Rejected
300-56	306-E 90-Day Waste Accumulation Area	98-230	01/27/1999	Rejected
300-57	335 Building 90-Day Waste Accumulation Area	2013-104	08/15/2013	Rejected
300-58	305B Steam Condensate Injection Well, Miscellaneous Stream #449	98-038	09/02/1998	Rejected
300-59	305 Building Steam Condensate, Miscellaneous Stream #417	98-098	12/15/1998	Rejected
300-60	303A Building Steam Condensate, Miscellaneous Stream #339, F.D. #26	98-186	02/12/1999	Rejected
300-61	303B Building Steam Condensate, Miscellaneous Stream #444, Injection Well #12	98-181	01/19/1999	Rejected
300-62	303C Building - Steam Condensate, Miscellaneous Stream #495	98-039	09/02/1998	Rejected
300-63	305B Building Stormwater Runoff, Miscellaneous Stream #458	--	--	Not Accepted
300-64	303F Building Steam Condensate, Miscellaneous Stream #352	98-208	01/19/1999	Rejected
300-65	303J Building - Steam Condensate Mud Leg (Part of 300 Main Supply), Miscellaneous Stream #266	98-040	09/02/1998	Rejected
300-66	303J Building HVAC Condensate, Miscellaneous Stream #267	98-041	09/02/1998	Rejected
300-67	Steam Condensate from 300 Area Main Steam Header, Miscellaneous Stream #414	98-153	12/15/1998	Rejected
300-68	305 Building - Steam Condensate, Miscellaneous Stream #451, Pit U23	98-099	12/15/1998	Rejected
300-69	305 Building Steam Condensate, Miscellaneous Stream #415	98-112	12/15/1998	Rejected
300-70	305 Building Steam Condensate, Miscellaneous Stream #416	98-113	12/15/1998	Rejected
300-71	306E Building - HVAC Condensate, Miscellaneous Stream #454	98-177	12/15/1998	Rejected

**Table 4-3. Not Accepted and Rejected Waste Sites in the 300 Area. (10 Pages)**

<b>WIDS Site Code</b>	<b>WIDS Site Name</b>	<b>Waste Site Reclassification Form</b>	<b>Reclassification Date</b>	<b>Reclassification Status</b>
300-72	308 Building Stormwater Runoff, Miscellaneous Stream #404	--	--	Not Accepted
300-73	308 Building Stormwater Runoff, Miscellaneous Stream #405	--	--	Not Accepted
300-74	308 Building Stormwater Runoff, Miscellaneous Stream #406	--	--	Not Accepted
300-75	309 Building Stormwater Runoff and Chiller Water, Miscellaneous Stream #445, Injection Well #20	98-184	01/19/1999	Rejected
300-76	306W Building Steam Condensate, Miscellaneous Stream #418	98-042	09/02/1998	Rejected
300-77	309 Building Stormwater Runoff, Miscellaneous Stream #450	--	--	Not Accepted
300-78	300 Area Main Header Steam Trap (Southwest Corner of 313 Building), Miscellaneous Stream #331	98-183	02/12/1999	Rejected
300-79	313 Building Stormwater Runoff, Miscellaneous Stream #457	--	--	Not Accepted
300-85	323 Building Steam Valve Pit, Miscellaneous Stream #453	98-043	09/02/1998	Rejected
300-86	300 Area South Parking Lot Stormwater Runoff, Miscellaneous Stream #524	98-182	12/15/1998	Rejected
300-87	309 Building Stormwater Runoff, Miscellaneous Stream #679	--	--	Not Accepted
300-88	320 Building Irrigation Line Effluent, Miscellaneous Stream #626	98-068	09/02/1998	Rejected
300-89	320 Building Irrigation Line Effluent, Miscellaneous Stream #627	98-069	09/02/1998	Rejected
300-90	320 Building Irrigation Line Effluent, Miscellaneous Stream #628	98-070	09/02/1998	Rejected
300-91	320 Building, Miscellaneous Stream #350	98-071	09/02/1998	Rejected
300-93	324 Building Stormwater Runoff, Miscellaneous Stream #354	--	--	Not Accepted
300-94	324 Building Stormwater Runoff, Miscellaneous Stream #711, 300-234	--	--	Not Accepted
300-95	324/336 Buildings Stormwater Runoff and Steam Condensate; Miscellaneous Stream #425	98-190	01/19/1999	Rejected
300-96	325 Building Steam Condensate, Miscellaneous Stream #707	98-044	09/02/1998	Rejected
300-97	325 Building Stormwater Runoff and Fire System Testing Water, Miscellaneous Stream #706	--	--	Not Accepted
300-98	325 Building South Stairwell Drain, Miscellaneous Stream #264, 300-229	--	--	Not Accepted
300-99	325 Building Nitrogen Tank Blowdown Miscellaneous Stream #265, Injection Well #399-3	98-046	09/02/1998	Rejected

**Table 4-3. Not Accepted and Rejected Waste Sites in the 300 Area. (10 Pages)**

<b>WIDS Site Code</b>	<b>WIDS Site Name</b>	<b>Waste Site Reclassification Form</b>	<b>Reclassification Date</b>	<b>Reclassification Status</b>
300-100	325 Building Stormwater Runoff, Miscellaneous Stream #408	--	--	Not Accepted
300-101	326 Building Stormwater Runoff and Steam Condensate, Miscellaneous Stream #409	98-047	09/02/1998	Rejected
300-102	328 Building Steam Condensate, Miscellaneous Stream #353	98-137	12/15/1998	Rejected
300-103	329 Building Stormwater Runoff, Miscellaneous Stream #422	--	--	Not Accepted
300-104	329 Building Stormwater Runoff, Miscellaneous Stream #546	--	--	Not Accepted
300-105	331 Building Steam Condensate, Miscellaneous Stream #513, Pit U1	98-058	09/02/1998	Rejected
300-106	331 Building Steam Condensate, Miscellaneous Stream #574	98-059	09/02/1998	Rejected
300-107	331 Building Stormwater Runoff, Miscellaneous Stream #447, Injection Well #32	--	--	Not Accepted
300-108	331 Building Stormwater Runoff, Miscellaneous Stream #448, Injection Well #37	--	--	Not Accepted
300-111	337 Building Stormwater Runoff, Miscellaneous Stream #516	--	--	Not Accepted
300-112	340 P-3 Pump Pit, Retention Process Sewer Pump Pit #3 French Drain, Miscellaneous Stream #428	98-243	01/15/1999	Rejected
300-113	340 Building Steam Condensate/ Water Heater Overflow, Miscellaneous Stream #341	98-236	01/15/1999	Rejected
300-114	340A Building Steam Condensate, Miscellaneous Stream #427	98-237	01/15/1999	Rejected
300-115	340B Building Backflow Preventer Emergency Drain, Miscellaneous Stream #426	--	--	Not Accepted
300-116	3506A Building Steam Condensate, Miscellaneous Stream #381	98-114	12/15/1998	Rejected
300-117	3506A Building Steam Condensate, Miscellaneous Stream #382	98-115	12/15/1998	Rejected
300-118	3621D Building Steam Condensate, Miscellaneous Stream #700, Pit U-7.	98-152	12/15/1998	Rejected
300-119	3621D HVAC Condensate, Miscellaneous Stream #401, 3621D Air/Condensate Blowdown Drain	98-242	12/15/1998	Rejected
300-120	3621D Building Diesel Generator Cooling System Condensate, Miscellaneous Stream #402, 3621D Air Driven Starter Motor Discharge Drain	98-241	12/15/1998	Rejected

**Table 4-3. Not Accepted and Rejected Waste Sites in the 300 Area. (10 Pages)**

<b>WIDS Site Code</b>	<b>WIDS Site Name</b>	<b>Waste Site Reclassification Form</b>	<b>Reclassification Date</b>	<b>Reclassification Status</b>
300-122	366 Building Fuel Oil Bunker Loading Station Steam Condensate, Miscellaneous Stream #344	98-238	12/15/1998	Rejected
300-124	366 Building Fuel Oil Bunker Steam Condensate, Miscellaneous Stream #653	98-240	12/15/1998	Rejected
300-125	3702 Building Steam Condensate, Miscellaneous Stream #346	98-151	12/15/1998	Rejected
300-126	3703 Building Steam Condensate, Miscellaneous Stream #431	98-150	12/15/1998	Rejected
300-127	3705 Building Stormwater Runoff, Miscellaneous Stream #410	--	--	Not Accepted
300-128	3705 Building Stormwater Runoff, Miscellaneous Stream #411	--	--	Not Accepted
300-129	3705 Building Stormwater Runoff, Miscellaneous Stream #412	--	--	Not Accepted
300-130	3705 Building Stormwater Runoff, Miscellaneous Stream #413	--	--	Not Accepted
300-150	3706 Building Steam Condensate, Miscellaneous Stream #430	98-116	12/15/1998	Rejected
300-151	3707B Building Steam Condensate, Miscellaneous Stream #327	98-117	12/15/1998	Rejected
300-152	3707B Building Steam Condensate, Miscellaneous Stream #326, U57	98-118	12/15/1998	Rejected
300-153	3707B Building Steam Condensate, Miscellaneous Stream #328	98-119	12/15/1998	Rejected
300-154	3707B Building Steam Condensate, Miscellaneous Stream #325	98-120	12/15/1998	Rejected
300-155	3707C Building Steam Condensate, Miscellaneous Stream #179, Injection Well #24	98-149	12/15/1998	Rejected
300-156	3707C Building Steam Condensate, Miscellaneous Stream #178, Injection Well #23	98-148	12/15/1998	Rejected
300-157	3707C Building Steam Condensate, Miscellaneous Stream #337	98-147	12/15/1998	Rejected
300-158	3707C Building Steam Condensate, Miscellaneous Stream #336, F.D. #31	98-146	12/15/1998	Rejected
300-159	3707C Building Steam Condensate, Miscellaneous Stream #335, F.D. #4	98-145	12/15/1998	Rejected
300-160	3707D Building Steam Condensate, Miscellaneous Stream #443, Injection Well #10	98-107	12/15/1998	Rejected
300-161	3707D Building Stormwater Runoff, Miscellaneous Stream #441	98-180	12/15/1998	Rejected
300-162	3707D Building Stormwater Runoff, Miscellaneous Stream #442	98-179	12/15/1998	Rejected
300-163	3708 Building Steam Condensate, Miscellaneous Stream #423	98-060	12/15/1998	Rejected

**Table 4-3. Not Accepted and Rejected Waste Sites in the 300 Area. (10 Pages)**

<b>WIDS Site Code</b>	<b>WIDS Site Name</b>	<b>Waste Site Reclassification Form</b>	<b>Reclassification Date</b>	<b>Reclassification Status</b>
300-164	3709 Building Steam Condensate, Miscellaneous Stream #338, F.D. #3	98-121	12/15/1998	Rejected
300-165	3709A Building Condensate, Miscellaneous Stream #347	98-094	12/15/1998	Rejected
300-166	3709A Building Steam Trap, Miscellaneous Stream #355	98-095	12/15/1998	Rejected
300-167	3711 Building Steam Condensate, Miscellaneous Stream #343	98-122	12/15/1998	Rejected
300-168	3711 Building Steam Condensate, Miscellaneous Stream #433	98-123	12/15/1998	Rejected
300-169	3712 Building Steam Condensate, Miscellaneous Stream #351	98-210	01/19/1999	Rejected
300-170	3712 Building Steam Condensate, Miscellaneous Stream #437	98-212	02/24/1999	Rejected
300-171	3713 Building Steam Condensate and Stormwater Runoff, Miscellaneous Stream #333, F.D. #7	98-124	12/15/1998	Rejected
300-172	3713 Building Steam Condensate, Miscellaneous Stream #435	98-125	12/15/1998	Rejected
300-173	3713 Building Steam Condensate, Miscellaneous Stream #512	98-126	12/15/1998	Rejected
300-174	3713 Building Stormwater Runoff and Steam Condensate, Miscellaneous Stream #544	98-127	12/15/1998	Rejected
300-176	3715 Building Steam Condensate, Miscellaneous Stream #678	98-144	12/15/1998	Rejected
300-177	3717 Building Steam Condensate, Miscellaneous Stream #330	98-093	12/15/1998	Rejected
300-178	3717 Building Steam Condensate, Miscellaneous Stream #329	98-128	12/15/1998	Rejected
300-179	3717 Building Steam Condensate, Miscellaneous Stream #324	98-129	12/15/1998	Rejected
300-180	3717 Building Stormwater Runoff, Miscellaneous Stream #545	--	--	Not Accepted
300-181	3717 Building Steam Condensate, Miscellaneous Stream #180	98-130	12/15/1998	Rejected
300-182	3717B Building Steam Condensate, Miscellaneous Stream #323	98-131	12/15/1998	Rejected
300-183	3718 Building Steam Condensate, Miscellaneous Stream #340, F.D. #40	98-143	12/15/1998	Rejected
300-184	3718A Building Stormwater Runoff, Miscellaneous Stream #270	--	--	Not Accepted
300-185	3722 Building Steam Condensate, Miscellaneous Stream #436, Injection Well #6	98-132	12/15/1998	Rejected
300-186	3730 Building Steam Condensate, Miscellaneous Stream #383	98-048	09/02/1998	Rejected
300-187	3730 Building Steam Condensate, Miscellaneous Stream #421	98-049	09/02/1998	Rejected

**Construction Activity Summary****Table 4-3. Not Accepted and Rejected Waste Sites in the 300 Area. (10 Pages)**

<b>WIDS Site Code</b>	<b>WIDS Site Name</b>	<b>Waste Site Reclassification Form</b>	<b>Reclassification Date</b>	<b>Reclassification Status</b>
300-188	3730 Building Steam Condensate, Miscellaneous Stream #420	98-050	09/02/1998	Rejected
300-189	3731 Building Steam Condensate, Miscellaneous Stream #269	98-051	09/02/1998	Rejected
300-190	3731 Building Stormwater Runoff, Miscellaneous Stream #517	--	--	Not Accepted
300-191	3731 Building Stormwater Runoff, Miscellaneous Stream #518	--	--	Not Accepted
300-192	3732 Building Steam Condensate, Miscellaneous Stream #349	98-142	12/15/1998	Rejected
300-193	3732 Building Steam Condensate, Miscellaneous Stream #419, Injection Well #15	98-141	12/15/1998	Rejected
300-194	3734 Building Steam Condensate, Miscellaneous Stream #334, F.D. #8	98-133	12/15/1998	Rejected
300-195	3734A Building Steam Condensate, Miscellaneous Stream #519	98-134	12/15/1998	Rejected
300-196	3745 Building Steam Condensate, Miscellaneous Stream #399	98-052	09/02/1998	Rejected
300-197	3745 Building Steam Condensate, Miscellaneous Stream #398, Injection Well #5	98-053	09/02/1998	Rejected
300-198	3745 Building Steam Condensate, Miscellaneous Stream #397, Injection Well #1	98-061	09/02/1998	Rejected
300-199	3745B Building Steam Condensate, Miscellaneous Stream #380	98-054	09/02/1998	Rejected
300-200	3745B Building Steam Condensate, Miscellaneous Stream #379	98-055	09/02/1998	Rejected
300-201	3762 Building Steam Condensate, Miscellaneous Stream #491, Injection Well #42	98-056	09/02/1998	Rejected
300-202	3765 Building HVAC Condensate, Miscellaneous Stream #345	98-139	12/15/1998	Rejected
300-203	377 Building Steam Condensate, Miscellaneous Stream #446, Injection Well #36	98-065	09/02/1998	Rejected
300-204	3790 Building Stormwater Runoff, Miscellaneous Stream #378, F.D. #19, Injection Well #19	--	--	Not Accepted
300-205	3790 Building Stormwater Runoff, Miscellaneous Stream #377, F.D. #18, Injection Well #18	--	--	Not Accepted
300-206	3790 Building Stormwater Runoff, Miscellaneous Stream #373	--	--	Not Accepted
300-207	3790 Building Stormwater Runoff, Miscellaneous Stream #375, F.D. #16, Injection Well #16	--	--	Not Accepted

**Table 4-3. Not Accepted and Rejected Waste Sites in the 300 Area. (10 Pages)**

WIDS Site Code	WIDS Site Name	Waste Site Reclassification Form	Reclassification Date	Reclassification Status
300-208	3790 Building Stormwater Runoff, Miscellaneous Stream #376, F.D. #17, Injection Well #17	--	--	Not Accepted
300-209	3790 Building Stormwater Runoff, Miscellaneous Stream #374	--	--	Not Accepted
300-210	3790 Building Stormwater Runoff, Miscellaneous Stream #514	--	--	Not Accepted
300-211	382 Building Steam Condensate, Miscellaneous Stream #429	98-140	12/15/1998	Rejected
300-212	MO010 Building Steam Condensate Sump, Miscellaneous Stream #400	98-057	09/02/1998	Rejected
300-213	West High Tank (Water Tower) Overflow and Steam Condensate, Miscellaneous Stream #332	98-135	12/15/1998	Rejected
300-215	300 Area South	98-232	01/27/1999	Rejected
300-217	300 Area Laydown Yard	--	--	Not Accepted
300-220	Gravel Pit #7, Pit 7	--	--	Not Accepted
300-222	384-W Brine Pit, 384-W Salt Dissolving Pit and Brine Pump Pit	2001-089	03/14/2002	Rejected
300-225	3790 Building Stormwater Runoff, Miscellaneous Stream #767	--	--	Not Accepted
300-226	3709A Building Miscellaneous Stream #768, Drip Station U39	98-096	05/26/1999	Rejected
300-227	3709A Building Miscellaneous Stream #769, Drip Station U38	98-097	05/26/1999	Rejected
300-228	Miscellaneous Stream #770, Drip Station U28, Steam Trap 3G-U28, HPD-TRP-026	98-247	05/26/1999	Rejected
300-230	Steam Trap 3G-U44, HPD-TRP-29, U44, Miscellaneous Stream #771	99-040	05/26/1999	Rejected
300-235	3713 Building Stormwater Runoff and Steam Condensate, Miscellaneous Stream #766	98-111	05/26/1999	Rejected
300-236	Steam Trap 3G-U45, HPD-TRP-020, U-45, Miscellaneous Stream #772	98-248	05/26/1999	Rejected
300-237	Steam Trap HPD-TRP-010, Miscellaneous Stream #773	98-246	05/26/1999	Rejected
300-238	Steam Trap 3G-U24, HPD-TRP-016, U-24, Miscellaneous Stream #774	98-245	05/26/1999	Rejected
300-239	Steam Trap 3G-U26, HPD-TRP-058, U26, Miscellaneous Stream #775	98-250	05/26/1999	Rejected
300-240	314 Building Stormwater Drain, Miscellaneous Stream #789	--	--	Not Accepted
300-241	320 Building Irrigation Line Effluent, Miscellaneous Stream #790	--	--	Not Accepted
300-242	325 Building Stormwater Runoff, Miscellaneous Stream #791	--	--	Not Accepted
300-243	318 Building Stormwater Runoff, Miscellaneous Stream #792	--	--	Not Accepted



**Table 4-3. Not Accepted and Rejected Waste Sites in the 300 Area. (10 Pages)**

<b>WIDS Site Code</b>	<b>WIDS Site Name</b>	<b>Waste Site Reclassification Form</b>	<b>Reclassification Date</b>	<b>Reclassification Status</b>
300-244	318 Building Stormwater Runoff, Miscellaneous Stream #793	--	--	Not Accepted
300-248	340B Steam Condensate Sump Pit	99-039	05/26/1999	Rejected
300-250	Valve Pit Southeast of 303A	--	--	Not Accepted
300-261	315 Filter Plant Process Sewer to River	99-044	05/26/1999	Rejected
300-264	327 Building, Postirradiation Testing Laboratory (PTL)	2013-110	08/13/2013	Rejected
300-266	Soil Under 3728 Building Drain Pipe	2001-036	03/08/2001	Rejected
300-267	French Drain on Northeast Corner of 3728 Building, Miscellaneous Stream #829	2001-037	03/08/2001	Rejected
300-271	324/327 Buildings 90 Day Storage Pad, HS-027	2000-108	09/14/2000	Rejected
300-282	Crib Near 3717-B Building	2011-052	06/08/2011	Rejected
300-285	300 Area Steam Condensate French Drains/Dry Wells, Ten French Drains and Dry Wells in 300 Area	--	--	Not Accepted
300-292	315 Water Filter Plant Waste Pipeline Segments	2011-038	05/17/2012	Rejected
300-295	384 Powerhouse Coal Ash Waste Pipeline Segments	2011-039	05/17/2012	Rejected
307 RB	307 Retention Basins	2013-103	08/13/2013	Rejected
309-TW-1	309-TW Tank #1, 309 Holdup Tanks	2013-097	08/13/2013	Rejected
309-TW-2	309-TW Tank #2, 309 Holdup Tanks	2013-098	08/13/2013	Rejected
309-TW-3	309-TW Tank #3, 309 Holdup Tank	2013-099	08/13/2013	Rejected
309-WS-1	309 Plutonium Recycle Test Reactor Ion Exchanger Vault, Reactor Ion Exchange Pit, PRTR Ion Exchange Vault	2013-100	08/13/2013	Rejected
309-WS-2	Rupture Loop Ion Exchange Pit, Ion Exchange Vault, Rupture Loop Annex Ion Exchange Loop Vault, RLAIX, PRTR Rupture Loop	2013-101	08/13/2013	Rejected
309-WS-3	309 Brine Tank	2013-102	08/13/2013	Rejected
313 CRO	313 Copper Remelt Operations, 313 Building Copper Remelt Operations	--	--	Not Accepted
315 RSDF	315 Retired Sanitary Drain Field	98-252	01/27/1999	Rejected
323 TANK 1	321 Building Underground Waste Tanks, 321 Tank Farm #3 (See Tank 323 4)	2012-106	07/15/2013	Rejected
323 TANK 2	321 Building Underground Waste Tanks, 321 Tank Farm #3 (See 323 Tank 4)	2012-107	07/15/2013	Rejected
323 TANK 3	321 Building Underground Waste Tanks, 321 Tank Farm #3 (See 323 Tank 4)	2012-108	07/15/2013	Rejected
323 TANK 4	321 Building Underground Waste Tanks, 321 Tank Farm #3	2012-109	07/15/2013	Rejected
331-C HWSA	331-C Hazardous Waste Storage Area, 331-C Low Level Radioactive Storage Area	98-045	09/02/1998	Rejected
335 & 336 RSDF	335 & 336 Retired Sanitary Drain Field	99-015	02/12/1999	Rejected

**Table 4-3. Not Accepted and Rejected Waste Sites in the 300 Area. (10 Pages)**

WIDS Site Code	WIDS Site Name	Waste Site Reclassification Form	Reclassification Date	Reclassification Status
340 CHWSA	340 Complex HWSA, 340 Complex Hazardous Waste Storage Area	98-249	01/15/1999	Rejected
350 HWSA	350 Building Hazardous Waste Storage Area, 350-D Hazardous Waste Staging Area	99-021	02/24/1999	Rejected
600-96	618-10 Borrow Pit	--	--	Not Accepted
600-97	618-11 Borrow Pit	--	--	Not Accepted
600-117	300 Area Treated Effluent Disposal Facility (TEDF), 310 Building	2013-112	08/13/2013	Rejected
600-210	300 Area TEDF Outfall	--	--	Not Accepted
600-244	Gravel Pit #6, Pit 6	--	--	Not Accepted
600-249	Debris Within Gravel Pit 6	98-229	04/06/1999	Rejected
600-255	300 Area Stormwater Percolation Pond	--	--	Not Accepted
600-265	Unidentified Pipes Near the 618-10 Burial Ground	--	--	Not Accepted
600-357	Geophysical Testing Pit #2 near 618-10	--	--	Not Accepted
600-366	PNNL Geophysics Test Site West of 300 Area	--	--	Not Accepted
618-6	Solid Waste Burial Ground #6	98-078	10/07/1998	Rejected
3713 PSHWSA	3713 Paint Shop Hazardous Waste Satellite Area	98-213	01/27/1999	Rejected
3713 SSHWSA	3713 Sign Shop Hazardous Waste Satellite Area	98-217	01/27/1999	Rejected
3746-D SR	3746-D Silver Recovery, 3746-D Silver Recovery Process	99-012	01/27/1999	Rejected
UPR-300-18	UN-300-18, Release at 321 Tank Farms	--	--	Not Accepted
UPR-300-31	UN-300-31	--	--	Not Accepted
UPR-300-43	300 Area Solvent Refined Coal Spill, UN-300-43	98-076	09/22/1998	Rejected

-- = not applicable

WIDS = Waste Information Data System

#### 4.1 300 IFBD, 300 AREA INTERIM FILTER BACKWASH DISPOSAL

The 300 Area Interim Filter Backwash Disposal (300 IFBD) waste site was located inside Gravel Pit 6, south of the 300 Area Vitrification Test Site and west of the 300 Area. The site was a temporary disposal area for filter backwash from the 300 Area Filter Water Plant. In 1987, what is now called the 300 Area Retired Filter Backwash Pond (300 RFBP) was discontinued. While the replacement pond, the 300 Area Filter Backwash Pond (300 FBP), was being constructed, there was no pond available to dispose of the filter backwash effluent. During those 4 months, 2,460,000 L (650,000 gal) of water and sediment were trucked across Route 4S for disposal. The liquid was allowed to soak into the ground.

Although the exact location of the disposal site was not known, there was a large depressed area on the east side of the Gravel Pit 6 property that formed a natural basin. Moderate amount of

rabbitbrush and grasses were observed growing on it. No definite, visible signs existed to suggest that the area was used for backwash disposal. However, some truck tire tracks and evidence of some grayish, silty sand on the surface in some areas of the natural basin were observed during field walkdown. The backwash was 90% river water. The sediment in the backwash contained alum, which is used as a coagulating agent prior to filtration. Analysis of the backwash was shown to be nonhazardous. No remedial action was required at the 300 FBP waste site. The 300 IFBD waste site operated for only 4 months and received less waste than the 300 FBP. Therefore, the 300 IFBP waste site was determined to not require cleanup and has been reclassified to “Rejected.”

#### **4.2 300 PHWSA, 300 AREA POWERHOUSE HAZARDOUS WASTE STORAGE AREA**

The 300 Area Powerhouse Hazardous Waste Storage Area (300 PHWSA) waste site was used to store nonradioactive solid waste. Some of the material stored included waste oil, lubricating oil, oil soaked rags, and aerosol cans. The waste stored at this site was moved to the 328 Building 90-Day Storage Area and the 3707-D Satellite Accumulation Area in 1995. In 1999, the site consisted of an empty asphalted area with a chain link fence, which was no longer used for storage of hazardous waste. As defined in TPA-MP-14, “Maintenance of the Waste Information Data System (WIDS),” Section 1.1, other storage areas include only those areas that are used to store materials not permitted under the RCRA. Under Part II.I.I.a of the “Dangerous Waste Portion of the Resource Conservation and Recovery Act Permit for the Treatment, Storage, and Disposal of Dangerous Waste at the Hanford Facility,” active 90-day waste storage areas and dangerous waste satellite accumulation areas and their locations must be maintained as a part of the operating record for the facility. To track these units in WIDS would be redundant to the requirements of the permit; therefore, TPA-MP-14 was specifically written to exclude these units from WIDS. It was determined that remediation was not required at this waste site and the site has been reclassified to “Rejected.”

#### **4.3 300 RLWS, 300 AREA RLWS, 300 AREA RADIOACTIVE LIQUID WASTE SEWER**

##### **4.3.1 History**

The 300 Area Radioactive Liquid Waste Sewer (300 RLWS) consisted of a network of underground pipelines that drained to the 340 Complex. The 300 RLWS pipelines connected the 309, 324, 325, 325-A, 326, 327, and 329 Buildings with the 340 Complex. The site was divided into three subsites: 300 RLWS:1, Radioactive Liquid Waste Sewer; 300 RLWS:2, 309 Process Sewer to 340 Complex; and 300 RLWS:3, Retained Sections of the Radioactive Liquid Waste Sewer and 309 Process Sewer. The 300 RLWS:3 subsite consists of pipelines where remediation could not be performed due to interfering retained structures or active utilities. Therefore, the 300 RLWS:3 is the only subsite that remains as “Accepted” in WIDS.

## Construction Activity Summary

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The 300 RLWS:1 replaced the single-walled stainless steel pipeline of the 300 Area Retired Radioactive Liquid Waste Sewer (RRLWS) with an encased stainless steel pipeline that was equipped with continuous leak detection systems. A separate 8-cm (3-in.) diameter single-walled carbon steel transfer line installed in 1960 connected the 309 Building to the 340 Complex (300 RLWS:2).

The sewer system was designed to transfer radioactive liquid wastes from various 300 Area research and development laboratories to the 340 Complex. The waste was sampled at the 340 Complex and stored for load out to the 200 Area double-shell tanks. High activity effluent was transferred (via truck or rail) to the 200 Area for storage and disposal. Wastes consisted of radioactive effluent with small quantities of various chemicals, decontamination solutions, acids, and bases. Effluent was typically derived from Hanford Site groundwater samples, tank waste samples, contaminated sediments, destructive examination of nuclear fuels, research and development process wastes, and residual waste from waste treatment studies.

On October 1, 1998, the 300 RLWS pipelines were isolated from the 340 Complex and waste generating facilities.

### 4.3.2 300 RLWS:1 and 300 RLWS:2 Excavation Operations

Remediation of the 300 RLWS:1 and 300 RLWS:2 subsites was performed from March 26 to December 15, 2014. Approximately 9,321 bank cubic meters (BCM) (12,191 bank cubic yards [BCY]) of excavated materials were removed and direct loaded for disposal at ERDF.

### 4.3.3 Verification Sampling

Verification sampling for the 300 RLWS:1 and 300 RLWS:2 subsites was performed on December 3, 2014, January 8, 2015, and March 12, 2015. Due to significant overlap between the 300 RLWS:1, 300 RLWS:2, 300 RRLWS:1, and 300-214:1 subsite excavations, the sampling designed for these waste sites were combined. At least 13 samples were collected to represent each pipeline subsite. Several samples were collected from the overlapping locations and were representative of more than one subsite. Therefore, a total of 24 verification samples were collected from the combined 300 RLWS:1, 300 RLWS:2, 300 RRLWS:1, and 300-214:1 subsite excavation.

The Global Positioning Environmental Radiological Surveyor (GPERS) surveys were performed within the 300 RLWS:1 and 300 RLWS:2 subsites following the site remedial action. The subsites were surveyed in two surveys. Both beta and gamma surveys had no elevated readings (above background levels) detected within 300 RLWS:1 and 300 RLWS:2 excavation areas.

### 4.3.4 Statement of Protectiveness

The contaminated materials from these subsites have been excavated and disposed of at ERDF. The remaining soil at the 300 RLWS:1 and 300 RLWS:2 subsites has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented

(or bounded) by the industrial land use scenario and poses no threat to groundwater or the Columbia River. Verification sampling results for cesium-137 and strontium-90 exceed the residential direct exposure CULs. Due to this exceedance, the residual contaminant concentrations do not meet human health direct exposure CULs for residential land use in the shallow zone soils. Because the waste site was remediated to achieve CULs for industrial land use, institutional controls to maintain industrial land use are required. The 300 RLWS:1 and 300 RLWS:2 subsites are verified to be remediated in accordance with the 300 Area ROD and have been reclassified to a status of “Final Closed Out.”

#### **4.4 300 RRLWS, 300 AREA RETIRED RLWS, 300 AREA RETIRED RADIOACTIVE LIQUID WASTE SYSTEM, CRIB WASTE SYSTEM, CONTAMINATED SEWER, INTERMEDIATE LEVEL RADIOACTIVE LIQUID WASTE SYSTEM**

##### **4.4.1 History**

The 300 RRLWS waste site was a network of single-walled stainless steel piping and carbon steel fittings buried between 3 and 6 m (10 and 20 ft) below grade. No isolation valves, radiation monitors, or other leak detection capabilities were built into the RRLWS system. Since the potential for corrosion was high, the retired system was abandoned in place. The system was replaced with the double-wall encased pipe of the 300 RLWS.

The 300 RRLWS site has been divided into two subsites: 300 RRLWS:1, Removed Sections of the 300 Area Retired Radioactive Liquid Waste Sewer System, and 300 RRLWS:2, Retained Sections of the 300 Area Retired Radioactive Liquid Waste Sewer System. The 300 RRLWS:2 subsite consists of pipelines where remediation could not be performed due to interfering retained structures or active utilities. Therefore, the 300 RRLWS:2 is the only subsite that remains as “Accepted” in WIDS.

Structures associated with the retired system include the 340 Complex, which received and treated effluent from the sewer system, as well as the 308, 324, 325, 326, 327, and 329 Buildings, which discharged effluents to the system. There were brass monuments located above 11 of the sewer clean outs.

##### **4.4.2 Excavation Operations**

Remediation of the 300 RRLWS:1 subsite was performed from June 3 through December 15, 2014. Approximately 106 BCM (139 BCY) of excavated materials were removed and direct loaded for disposal at ERDF. Waste materials consisted of contaminated soil, gravel, pipe, and concrete. No overburden soil was salvaged from the 300 RRLWS:1 subsite excavation and no staging pile areas were utilized.

#### **4.4.3 Verification Sampling**

Verification sampling for the 300 RRLWS:1 subsites was performed on December 3, 2014, January 8, 2015, and March 12, 2015. Due to significant overlap between the 300 RLWS:1, 300 RLWS:2, 300 RRLWS:1, and 300-214:1 subsite excavations, the sampling designs were combined and applied to the extent possible. At least 13 samples were collected to represent each pipeline subsite. Several samples were collected from the overlapping locations and were representative of more than one subsite. Therefore, a total of 24 verification samples were collected from the combined 300 RLWS:1, 300 RLWS:2, 300 RRLWS:1, and 300-214:1 subsite excavation.

The GPERS surveys were performed within the 300 RRLWS:1 subsite excavation following the site remedial action. The subsite was surveyed in two surveys. Both beta and gamma surveys had no elevated readings (above background levels) detected within the 300 RRLWS:1 excavation area.

#### **4.4.4 Statement of Protectiveness**

The contaminated materials from these subsites have been excavated and disposed of at ERDF. The remaining soil at the 300 RRLWS:1 subsite has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land use scenario and poses no threat to groundwater or the Columbia River. Verification sampling results for cesium-137 and strontium-90 exceed the residential direct exposure CULs. Due to this exceedance, the residual contaminant concentrations do not meet human health direct exposure CULs for residential land use in the shallow zone soils. Because the subsite was remediated to achieve CULs for industrial land use, institutional controls to maintain industrial land use are required. The 300 RRLWS:1 subsite has been reclassified to a status of “Final Closed Out.”

### **4.5 300 SSS, 300 AREA SANITARY SEWER SYSTEM**

The 300 SSS waste site is a sewer system comprised of underground sewer lines inside the 300 Area that connect to the City of Richland sewer system. Prior to 1996, the sewer was connected to septic tank and sanitary leaching trenches located northeast of the 300 Area. The 300 Area Sanitary Sewer utilized gravity and pressure collection lines, septic tanks, and leaching trenches. The original sewer system was constructed of concrete and clay pipes and was designed as the 3907 system. The system was connected to a tile field that was replaced, in 1951, by a septic tank and two leaching trenches. Additional septic tanks were added in 1975. The 300 Area Sanitary Trenches (WIDS Site 300-52) site includes two septic tanks and unlined trenches that were connected to the 300 Area Sanitary Sewer System. The 300 Area Sanitary Trenches (WIDS Site 300-52) is a “no action” site in the 300-FF-1 Operable Unit. Based on more current information (e.g., the potential for contaminated material to have gone to the sanitary trenches identified during Orphan Site Evaluation and miscellaneous sanitary sewer system components not previously identified), site 300-276 was created to handle potentially

contaminated components of the sanitary sewer system. Based on this historical process information, the 300 SSS site has been reclassified to “Not Accepted.”

#### **4.6 300 VTS, 300 AREA VITRIFICATION TEST SITE, IN SITU VITRIFICATION TEST SITE**

##### **4.6.1 History**

The 300 VTS, 300 Area Vitrification Test Site was used by PNNL during the 1980s and 1990s as a field demonstration site for in situ vitrification of soils containing simulated waste. It was an irregularly shaped area located west of Route 4 South and approximately 9 m (30 ft) south of the 618-7 Burial Ground. The site was not associated with the 618-7 Burial Ground.

After the vitrification tests were conducted in the 1980s, all contaminated soil and equipment was removed from the site. In 1993, a large-scale melter (the Terra-Vit) was constructed at the site but never used. During 1998 and 1999 the in situ vitrification site was cleaned up by PNNL prior to transferring to Bechtel Hanford, Inc. for surveillance and maintenance (CCN 0517791). It was confirmed that no radiological contamination remained at the site and all miscellaneous materials and equipment were removed, including three ore cars contaminated from previous use at a thorium mine. Several large in situ vitrification melter structures remained on the site, including the Terra-Vit.

##### **4.6.2 Excavation Operations**

Remedial action at the 300 VTS site began in December 2004. The in situ vitrification melter structure was demolished using mechanical shears. The off-gas containment hood was sheared and sent to ERDF for disposal. The support frame was sheared and the scrap metal was recycled.

The Terra-Vit melter, fabricated from large structural steel members surrounded by a refractory concrete lining, was demolished using an excavator and mechanical shears. The refractory lining was sent to a demolition landfill (Pit 9) and the structural steel was recycled.

Buried vitrified monoliths, identified by the geophysical survey in two separate areas, were excavated and size reduced using a hydraulic impact breaker. The rubble was then sent to Pit 9 for disposal. Two test trenches were also excavated, the locations of which were based on historical information and geophysical anomalies. No soil contamination, except cesium-137, which was below the remedial action goals, was found in the test trenches.

Miscellaneous debris, consisting of buried graphite electrodes and pipe casings, were excavated from several vitrification test locations at the site. The graphite electrodes were sent to ERDF and the pipe casings were recycled.

A total of 83 metric tons (91 US tons) of structural steel was recycled from the demolition of the Terra-Vit melter and off-gas hood support structure. Disposal of the off-gas containment structure resulted in 10 metric tons (11 US tons) of material being sent to ERDF. A total of 5,218 metric tons (5,752 US tons) of vitrified soil was excavated and sent to Pit 9 for disposal.

#### **4.6.3 Verification Sampling**

Final cleanup verification samples were collected on August 22, 2005, to confirm acceptability of residual contaminant concentrations in soil at the 300 VTS site. Based on the overall footprint of the area and depth of excavation, the 300 VTS site was classified as one shallow zone decision unit. Each verification sample was collected as a composite sample formed by combining soil collected at four random locations within the sampling area (excluding the quality assurance/quality control samples).

#### **4.6.4 Statement of Protectiveness**

The 300 VTS site has achieved the RAOs and corresponding RAGs established in the ROD. Test equipment and buried monoliths have been demolished or excavated, removed from the site, and recycled or disposed. The remaining soil at the 300 VTS site has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the residential land use scenario and poses no threat to groundwater or the Columbia River. The 300 VTS waste site has been reclassified to a status of “Final Closed Out.”

### **4.7 300-1, OLD NORTH RICHLAND AUTOMOTIVE MAINTENANCE YARD**

The 300-1 waste site was located east of the George Washington Way extension and south of the 300 Area fence line, inside the chained off area. The site consisted of three open bulldozer cuts, each 1.5 m by 3 m by 1.2 m deep (5 ft by 10 ft by 4 ft deep). A slab of asphalt 5 by 6 m (15 by 20 ft) was also present. Debris in the area included empty bottles, lumber, empty cans of automotive oil, 19-L (5-gal) cans and buckets, a wooden wire spool, an automotive front grill, and old automotive oil filters.

Due to the culturally sensitive issues in this area, it was concluded that no further action would be necessary at this site. The site was reclassified as “Final No Action.”

### **4.8 300-2, CONTAMINATED LIGHT WATER DISPOSAL; POTENTIAL TRENCH LOCATION #1**

#### **4.8.1 History**

The 300-2 waste site was a suspected liquid disposal area associated with the September 29, 1965, contamination event that occurred at the 309 Building, Plutonium Recycle Test Reactor (PRTR). During the major contamination event, a fuel element was heated until



molten, causing a reactor process tube to burst. The event grossly contaminated the PRTR's heavy water moderator with fission products and with light water from the coolant. Most of the primary coolant and make-up coolant water was disposed to the 200 Area via the 340 Building.

Secondary coolant and other streams normally free of contamination were ordinarily routed directly to the Columbia River. However, when radionuclide contamination was detected in the secondary coolant stream, the water was rerouted and pumped to the ground. Approximately 189,270 L (50,000 gal) of liquid waste was disposed to the ground. It was subsequently determined that contamination of the secondary coolant was caused by neutron activation of the secondary coolant water during the fuel element rupture. At no time did release of reactor material (transuranics or fission products) to the secondary coolant occur. The liquid disposed to the ground would have contained short-lived radionuclides of cerium, iodine, and noble gases. No transuranic material or fission products would have been contained in this liquid. It is expected that all radionuclides disposed to the ground would have decayed to undetectable levels in the 47 years from 1965 to 2012.

#### **4.8.2 Confirmatory Sampling**

Two suspected 300-2 waste site locations were investigated and sampled. The primary 300-2 waste site location was east of the 309 Building parking lot, beneath the location of the former 3766 Building. The secondary location of the disposal of the contaminated liquid was just east of the location of the former 3766 Building.

The 300-283, Contaminated Light Water Disposal Site #2 waste site was an alternate location for the 300-2 liquid disposal area. A test pit for the 300-283 location was sampled on April 26, 2012. The 300-283 sample location was approximately 68 m (223 ft) east of the primary 300-2 waste site.

#### **4.8.3 Statement of Protectiveness**

Confirmatory sampling determined that contaminant concentrations at this site support future industrial and rural-residential land use and are protective of groundwater and the Columbia River. The contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils. The results of confirmatory sampling performed at this site indicate that the concentrations of COPCs meet the RAGs for direct exposure, groundwater protection, and river protection. In accordance with this evaluation, the confirmatory sampling results support a reclassification of the 300-2 waste site to "Final No Action." Institutional controls to prevent uncontrolled drilling or excavation into the deep zone are not required.

## **4.9 300-4, DOE 351 SUBSTATION SOIL CONTAMINATION**

### **4.9.1 History**

The 300-4 waste site was located north of the 305 Building and is comprised of soil contamination at the 351 Substation. The 351 Substation was operated by the Bonneville Power Administration (BPA) from March 30, 1973, until February 11, 1991, when all BPA equipment was removed. Mineral oil containing polychlorinated biphenyls (PCBs) and solvents were used during routine maintenance. Oil leaks were reported and soil samples found PCBs in the range of 1 to 3 mg/kg. Uranium associated with the fuel fabrication activities in the 300 Area was discovered clinging to the below ground portions of concrete footings.

The 351 Substation included the 351A and 315B Buildings and associated high-voltage transmission structures. Demolition of the above-grade portion of the 351 Substation was completed by deactivation, decontamination, decommissioning, and demolition activities in October 2014. Building footings, foundations, and high voltage footings remained after deactivation, decontamination, decommissioning, and demolition was completed. A cable vault beneath the 351B Building was left in place as well.

### **4.9.2 Excavation Operations**

Remedial action at the 300-4 waste site, and a segment of the 300-15 process sewer piping, began on December 1, 2014, and continued through January 15, 2015. Site remediation focused on removing the below grade features of the 351 Substation and included soil, concrete foundations and footings, basement structures, metal, nonfriable asbestos from electrical ductwork, and vitrified clay piping. The cable vault beneath the 351B Building was also removed and disposed. The remediation extended to an estimated maximum depth of 3.5 m (11.5 ft) below ground surface, resulting in approximately 5,304 BCM (6,937 BCY) of contaminated soil and debris being removed and disposed at ERDF. All material was direct loaded from the excavation into ERDF cans for disposal; therefore, no waste staging pile area was created. Additionally, no overburden material was salvaged for use as backfill material. No anomalies were observed during the remediation. An area of stained soil was observed in the northwest portion of the excavated waste site. Following in-process sampling, an additional 543 BCM (710 BCY) of contaminated soil was removed on February 19 and 23, 2015, resulting in a total of 5,847 BCM (7,648 BCY) of soil and debris being removed from the 300-4 waste site and disposed at ERDF.

### **4.9.3 Verification Sampling**

Verification sampling for the 300-4 waste site was performed on March 17 and 18, 2015. The excavation area footprint and the remaining area within the WIDS footprint were the two decision units identified for the 300-4 waste site for verification sampling. A combination statistical and focused sample design was used to evaluate the decision units. Twelve statistical soil sample locations were identified for each decision unit. In addition to performing statistical sampling, five focused samples were collected from the excavation area decision unit.

One focused sample was added to a location where additional remediation was conducted because an in-process soil sample showed elevated total petroleum hydrocarbons (TPH) above the CULs. Four additional focused samples were added, one each, to the smaller, distinct excavations where a sample point was not statistically generated.

Multiple GPERs surveys were conducted over the entire 300-4 waste site. The individual surveys were combined into composite beta and gamma track maps. No elevated radiological activity was detected.

#### **4.9.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed of at ERDF. The remaining soil at the 300-4 waste site has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the residential land use scenario and poses no threat to groundwater or the Columbia River. Because the waste site was remediated to achieve residential land use, the site met the requirements for unlimited use and unrestricted exposure; institutional controls to maintain industrial land use are not required. The 300-4 waste site has been reclassified to a status of “Final Closed Out.”

### **4.10 300-6, 366/366A FUEL OIL BUNKERS**

#### **4.10.1 History**

The 300-6 and associated waste sites (300-123, 200-268, 300-273, and UPR-300-42) were located northeast of the corner of Apple Street and Wisconsin Street in the 300 Area. The 300-65, 300-66, 300-122, and 300-124 underground injection control (UIC) wells were removed during the 300-6 excavation because they were within the footprint of the 300-6 waste site excavation layback. The 3715, 303E, and 303J Building slabs were removed during the 300-6 waste site excavation because they were also located in the layback area. The 300-6 waste site, 366/366A Fuel Oil Bunkers, is also known as the 384 Underground Fuel Bunker because the oil tanks stored fuel oil for the 384 Powerhouse.

#### **4.10.2 Excavation Operations**

The fuel tanks were drained as part of the shutdown of the 384 Powerhouse in 1998. All products were removed from the bunkers by an offsite vendor, except for some residual material that remained in the bottom of each tank, primarily in the tank sumps. The fuel residues remaining in the tanks were sampled on March 25, 1998. Several grab samples were collected from each tank by scraping the residue from the sides of each tank. Grab samples were used to produce a single composite from each tank.

The four concrete bunkers and the soil adjacent to the sidewalls of the bunkers were removed during the summer of 2001. After the bunker tanks were removed, the soil was excavated to a

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depth of about 4.6 m (15 ft) below grade. The soil was separated into two categories and stockpiled on plastic. A sampling and analysis plan was used to direct sampling of two contaminated soil stockpiles removed during excavation of the bunker tanks, a third “possibly clean” soil stockpile, the excavation sidewall soil, and the vadose zone below the excavation site. The stockpile southwest of the excavation was initially presumed to be clean soil. All three soil piles were found to exceed CULs for either TPH, total naphthalenes, and/or carcinogenic polycyclic aromatic hydrocarbons (PAH).

The sidewalls of the excavation were also sampled, and all results were below the CULs for TPH, total naphthalenes, PAH, and PCBs. Two boreholes were drilled (east and west), and samples were taken from the vadose zone below the excavation. Borehole samples were analyzed for TPH, volatile organic compounds (VOCs), semivolatile organic compounds, and PAH. Sample results from both boreholes indicated TPH and PAH contamination. In October 2002, Ecology and U.S. Department of Energy Richland Operations Office agreed to the removal of additional soil above 4.6 m (15 ft) along the west and southwest sides of the excavation. The additional soil removal took place from December 4 to 9, 2002.

Bioremediation of the soils was ruled out as a possibility because of the high levels of PAH. In March and June 2003, the petroleum contaminated soil was disposed offsite at the Columbia Ridge landfill in Arlington, Oregon. The shipments totaled approximately 4,587 m<sup>3</sup> (6,000 yd<sup>3</sup>).

Remediation of the waste site was performed from August 2 to December 8, 2010. The western portion of the 300-6 waste site excavation extended to groundwater, and a pool of water remained in the floor of the excavation. The excavation was approximately 15 m (49.5 ft) deep in the 300-6 west borehole location (when measured to the surface of the pool of water) and approximately 11.5 m (37.7 ft) deep in the 300-6 east borehole location. The 300-6 and associated waste sites’ excavation resulted in approximately 34,770 BCM (45,477 BCY) of material removed for disposal at ERDF.

Debris (piping and concrete) and soil from the remediation of the 300-6 and associated waste sites were direct loaded to ERDF. No overburden soil stockpiles were associated with the waste sites as a result of Washington Closure Hanford’s (WCH) remediation, and no anomalies were noted. The 300-65, 300-66, 300-122, and 300-124 UICs were located within the footprint of the 300-6 excavation layback and removed during the excavation. The 3715, 303E, and 303J Building slabs were removed during the 300-6 waste site excavation because they were located in the excavation layback as well.

The 300-123 UIC was identified as a WIDS waste site; the french drain was removed as part of the layback to remove the contaminated soil at the 300-6 waste site. The french drain consisted of soil and rock that extended to approximately 1.4 m (4.5 ft) below ground surface (bgs). Whereas, the existing floor of the 300-6 waste site excavation is approximately 11.3 m (37 ft) bgs.

#### **4.10.3 Verification Sampling**

Verification sampling for the 300-6 and associated waste sites was conducted August 24, 2011. Excavation of the 300-6 waste site extended to the water table; therefore, the vadose zone source of groundwater contamination has been removed to mitigate current and future impacts. The sample design for the 300-6 and associated waste sites consisted of a single decision unit for verification sampling. The sample design included 12 statistical samples and a single focused sample at the east borehole location. The verification sampling area was limited to the floor of the excavation where there was the greatest potential for residual contamination. The upper boundary of the sampling area was based on the civil survey performed for the excavation and was represented by the topographical line at the 111.5-m (365.8-ft) elevation mark. This sampling area stratum extended approximately 2 m (6.6 ft) beyond the eastern portion of the 300-6 waste site WIDS boundary and wrapped around the groundwater pool. Only surface contamination was expected at the 300-268 waste site as process knowledge indicated only dry processes were conducted in the 3741 Building. Therefore, the 300-268 waste site was included in the statistical sampling area.

#### **4.10.4 Statement of Protectiveness**

Remedial actions were performed to support future industrial land use and to protect groundwater and the Columbia River. Further, the achieved residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 m [15 ft] deep). The site extended into the deep zone (greater than 4.6 m [15 ft] deep); however, the site was closed out using the shallow zone direct exposure, groundwater, and river protection cleanup criteria. Results indicate that the site supports future land uses that can be represented (or bounded) by the residential land use scenario and poses no threat to groundwater or the Columbia River. The 300-6 waste site has been reclassified to a status of “Final Closed Out.”

### **4.11 300-7, UNDOCUMENTED SOLID WASTE BURIAL GROUND ADJACENT TO 618-8, POSSIBLE EARLY BURIAL GROUND**

#### **4.11.1 History**

The 300-7 waste site consisted of a mound-covered area of approximately 2,205 m<sup>2</sup> (7,234 ft<sup>2</sup>). The 300-7 waste site extended to the north and west from the 300 Area North Parking Lot, west of the north end of the 618-8 Burial Ground. It formed an irregular-shaped polygon where the north edge of the parking lot is the south edge of the waste site. The site was covered with natural vegetation and some visible surface debris, such as concrete, trash, and cables. The boundary of the 300-7 waste site was enlarged in 1998 to include the area of visible surface debris adjacent to the mound.

#### **4.11.2 Excavation Operations**

Remediation of the 300-7 waste site was performed from July 8 through July 31, 2014. Approximately 7,870 BCM (10,293 BCY) of excavated materials were removed and loaded for direct disposal at ERDF. According to the post-excavation civil survey, the maximum depth of the waste site excavation was approximately 2 m (6.6 ft). However, due to the mounded nature of the waste site surface, some areas of the 300-7 waste site excavation extended to a depth of 3.8 m (12.5 ft), below the original ground surface. Excavated materials consisted of soil, gravel, wood, steel, wire, and concrete debris. In addition, one truck battery, two old steel cart wheels, and two metal pails were removed from the 300-7 excavation and disposed at ERDF. No overburden or staging pile areas were utilized during 300-7 waste site remediation.

#### **4.11.3 Verification Sampling**

Verification sampling for the 300-7 waste site was performed on September 30, 2014. The excavation area footprint was the only decision unit identified for the 300-7 waste site for verification sampling.

#### **4.11.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed of at ERDF. The remaining soil at the 300-7 waste site has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the residential land use scenario and poses no threat to groundwater or the Columbia River. The waste site contamination does not extend into the deep zone soils. Although the 300-7 waste site is in the industrial portion of the 300 Area, the waste site remediation achieved CULs for residential land use. Therefore, the site meets the requirements for unlimited use and unrestricted exposure, and institutional controls to maintain industrial land use are not required. The 300-7 waste site has been reclassified to a status of “Final Closed Out.”

### **4.12 300-8, ALUMINUM RECYCLE STORAGE AREA, ALUMINUM SHAVINGS AREA**

#### **4.12.1 History**

The 300-8 waste site was located along the railroad line north of the 300 Area and adjacent to the 618-8 and 618-3 Burial Grounds. Beginning in 1962, the area adjacent to the railroad line was used to stage scrap metal from the 300 Area in support of a program to recycle aluminum. Some of the metal was contaminated with low levels of uranium and beryllium from 300 Area operations. Scrap metal was staged in the area until sufficient quantities were available to solicit bids from offsite salvage vendors. Sold scrap metal was loaded into open rail cars with clamshell buckets. This process of staging and loading the scrap metal scattered the material over an area greater than 30,000 m<sup>2</sup> (321,000 ft<sup>2</sup>). Geophysical surveys of the area suggested that the scrap metal was dispersed in the top 0.3 m (1 ft) of soil. During remediation, it was

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determined that scrap metal was predominantly in the top 0.6 m (2 ft) of soil. The posted soil contamination areas were separated by unposted dirt roads that were cleared of contamination and a railroad line. The railroad line was excluded from the 300-8 site and has not been investigated because it may have future potential uses in support of ongoing or new industrial activities in the 300 Area.

### 4.12.2 Excavation Operations

Remedial action at the 300-8 site was conducted from December 2004 to May 2005. Excavation of the site included the removal of small quantities of miscellaneous metal construction-type debris (e.g., nuts, bolts), aluminum metal shavings, and soil. No indications of liquid waste disposal or land disposal restricted materials were observed during excavation.

Initially, material within the site boundaries was removed to a depth of 0.3 m (1 ft). Following excavation, geophysical surveys and ground-truthing excavations indicated that significant quantities of metal shavings remained at the site. Consequently, an additional 0.3 m (1 ft) of material was removed from the entire area. Following this excavation, additional geophysical surveys were performed at 35 randomly located 3- by 3-m (10- by 10-ft) test areas within the 300-8 waste site boundaries. Fewer than 10 discrete pieces of metallic debris were detected. Based on these results and ground-truthing excavations, it was concluded that remediation was complete.

Approximately 39,750 metric tons (43,820 US tons) of material was removed for disposal at ERDF.

### 4.12.3 Verification Sampling

Radiological surveys were performed in May 2005 after excavation operations were complete at the 300-8 waste site to provide an initial assessment of attainment of radiological CULs. The survey methodology was based on an assumption of uranium as the primary radiological contaminant. Results of the surveys were depicted based on various ranges of detected uranium activity, with <50 pCi/g being the lowest reported range based on instrument sensitivity. Locations where survey results indicated uranium activities >50 pCi/g were investigated further in the field by radiological control technicians assigned to the project. Contaminated items identified by the technicians during the field investigation were hand-removed for disposal at ERDF. Results from the radiological surveys provided an initial indication that residual soil concentrations of uranium were statistically below the applicable cleanup criteria.

Final cleanup verification samples were collected on July 27 and 28, 2005, to confirm acceptability of residual contaminant concentrations in soil at the 300-8 waste site. Based on the overall footprint of the area and depth of excavation, the 300-8 waste site was classified as four shallow zone decision units. Each verification sample was collected as a composite sample formed by combining soil collected at four random locations within the sampling area (excluding the quality assurance/quality control samples).

**4.12.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed at ERDF. The 300-8 waste site was evaluated against the criteria established for the residential land use criteria in the 300 Area Final Action ROD (EPA 2013). Results indicate that the site supports future land uses that can be represented (or bounded) by the residential land use scenario and poses no threat to groundwater or the Columbia River. The 300-8 waste site was reclassified to a status of “Final Closed Out.”

**4.13 300-9, POSSIBLE EARLY BURIAL GROUND SITES NORTH OF RR AND NORTH OF 618-8, SOLID WASTE BURIAL GROUND****4.13.1 History**

The 300-9 waste site was located within the 300-8 waste site and north of the 618-8 Burial Ground. The 300-9 waste site was identified as the possible location of an early solid waste burial ground. The burial ground was initially identified as a location of unknown dimensions, used in 1943 and 1944 for unknown material disposition, approximately 690 m (2,260 ft) north of the 300 Area. The location of the 300-9 waste site was established based on additional historical aerial photography showing that the suspect area extends eastward beyond the area investigated during the limited field investigation.

**4.13.2 Excavation Operations**

Remediation of the 300-9 waste site was performed from November 23 through December 4, 2014. The excavation extended to an approximate maximum depth of 1.5 m (5 ft) bgs, resulting in approximately 3,891 BCM (5,089 BCY) of contaminated soil being removed for disposal at ERDF. Some laboratory “thimbles” were also removed and disposed. No overburden soil was salvaged from the 300-9 waste site excavation and no staging pile areas were utilized.

**4.13.3 Verification Sampling**

Verification sampling within the 300-9 waste site excavation was performed on December 29, 2014. An evaluation of the resulting data found that the waste removal action achieved compliance with the industrial scenario remedial action objectives for the 300-9 waste site. One decision unit was identified for the 300-9 waste site for verification sampling and consisted of the excavation footprint. Twelve statistical soil samples were collected from the excavation decision unit and submitted to offsite laboratories for analysis.

**4.13.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed of at ERDF. The remaining soil at the 300-9 waste site has been sampled, analyzed, and evaluated.



Results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land use scenario and poses no threat to groundwater or the Columbia River. Verification sampling results for aroclor-1260 exceeded the residential direct exposure CUL. Due to this exceedance, the residual contaminant concentrations do not meet human health direct exposure CULs for residential land use in the shallow zone soils. Because the waste site was remediated to achieve CULs for industrial land use, institutional controls to maintain industrial land use are required. The 300-9 waste site has been reclassified to a status of “Final Closed Out.”

#### **4.14 300-10, BURIAL TRENCH WEST OF PROCESS TRENCHES**

##### **4.14.1 History**

The 300-10 waste site consisted primarily of soil mixed with clean and contaminated metal shavings. The estimated area was approximately 657 m<sup>2</sup> (7,069 ft<sup>2</sup>) based on ground-penetrating radar data collected in July 1997.

##### **4.14.2 Excavation Operations**

The 300-10 waste site was excavated to a depth of 1.6 m (5 ft) below grade. A radiological survey of the remaining soil was performed and it was determined that additional soil removal was not required. In addition to the radiological surveys, a metal detector was used to identify metal shavings in the soil. Although radiological screening instruments did not indicate soil contamination, the detector identified metallic anomalies after completion of the excavation. Metallic anomalies consisting of nails, iron scraps, and aluminum shavings were excavated by hand and transported to ERDF. None of the identified metallic objects were radiologically contaminated.

##### **4.14.3 Verification Sampling**

A total of four random samples were collected. Two initial verification samples were collected from random locations on August 26, 1997. A second pair of verification samples was collected after completion of the metal detector surveys on October 3, 1997.

##### **4.14.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed at ERDF. Results indicate that the site supports future land uses that can be represented (or bounded) by the residential land use scenario and poses no threat to groundwater or the Columbia River. The 300-10 waste site was reclassified to a status of “Final Closed Out.”

**4.15 300-11, PUMPHOUSE UNDERGROUND GASOLINE TANK,  
382 PUMPHOUSE UGT, 382-1****4.15.1 History**

The 300-11 waste site was located near the intersection of Wisconsin and Apple Streets. There were three underground gasoline storage tanks located near the northwest corner of the 382 Pumphouse Building used to store leaded and unleaded gasoline for use by the emergency gasoline engine-powered pumps in the 382 Building. The 300-11 waste site was identified following the removal of underground gasoline tank 381-1 in September 1992 after the tank had failed a leak test. Because of the tank's proximity to other buried tanks and utilities, no further testing or remediation was attempted at that time. The contaminated soil was marked with a sheet of blue plastic and the excavation was backfilled to grade. The other two tanks at this location, tanks 382-2 and 382-3, were excavated and removed in 1994.

On April 21 and May 11, 1993, soil-gas probe sampling was performed to investigate the lateral and vertical extent of contamination from the 382-1 underground gasoline storage tank leak. Sampling results indicated that spilled products have primarily seeped downward through the soil profile with little lateral migration. Soil vapors collected from the deep soil-gas probe contained significant concentrations of VOCs from an approximate depth of 1.5 to 7 m (5 to 23 ft) bgs. Below a depth of about 7 m (23 ft), the vapor levels decreased significantly. There low levels indicated the majority of the spilled petroleum products were in the top 6 to 7 m (20 to 23 ft) of the soil profile. Soil vapor collected from a depth of 8 m (26.4 ft) contained only trace levels of VOC characteristics of petroleum products. Sampling from a nearby groundwater well indicated that there was no petroleum contamination in the groundwater.

In 2012, during demolition of the 382 Building below grade structure, a faint gasoline odor was observed by the project personnel and was attributed to the 300-11 waste site, which was scheduled for the remediation at that time.

**4.15.2 In-process Sampling**

On June 4, 2013, a pothole was excavated to a depth of 5.5 m (18 ft), where the blue plastic was encountered at approximately 2 m (6 ft) below grade. This blue plastic was left in place following tank removal in 1992. An in-process sample was collected at the depth of 5.5 m (18 ft) bgs. The in-process sampling results indicated that gasoline and COCs were undetected at this location. No gasoline odor was observed during excavation and no VOCs were detected with field monitoring equipment.

A second in-process sample was collected at the depth of 4.6 m (15 ft) following 300-11 waste site remediation with the 300-15:3 subsite pipelines. Sampling results indicated that gasoline and VOCs were undetected. Screening for VOCs was performed during and immediately following remediation. Radiological monitoring was performed during the duration of the 300-11 waste site excavation with no radiological activity detected in the field during remediation activities.

**4.15.3 Excavation Operations**

The 300-11 waste site was remediated between June 2 and July 22, 2014, during remediation of the adjacent 300-15:3 pipelines. The 300-11 waste site was excavated to a depth of 4.6 m (15 ft).

**4.15.4 Statement of Protectiveness**

The 300-11 waste site was identified as a waste site requiring remediation (EPA 2013); however, in-process soil sampling performed at the 300-11 waste site indicated that no residual contamination is present. Therefore, it was concluded that no action was required. The waste site has been reclassified to “Final No Action.”

**4.16 300-12, 325 LABORATORY DIESEL FUEL TANK**

The 300-12, 325 Laboratory Diesel Fuel Tank was a single underground diesel fuel storage tank, located at the northwest corner of the 325 Building, used to store diesel for an emergency generator.

It was taken out of service and removed (including accessible piping) in October 1992. The tank appeared to be in very good condition. The tank was loaded onto a flatbed truck and taken outside the fenced area of the 325 Building, where the tank was surveyed. No radiological activity was detected and the tank was released. Approximately 38.2 m<sup>3</sup> (50 yd<sup>3</sup>) of excavated soil were removed from the tank pit and laid out on plastic. Two samples were collected from the excavated soil and two samples were taken from the excavation area. In addition, the soil was surveyed at the time of tank removal and no contamination was detected above background levels. No discolored soil sites or other unusual features were found during a visual inspection of the pit and cradle where the tank was located.

The site was backfilled with native soil and an asphalt pad was replaced. Because no contamination above background was identified at this tank location, it was determined that remediation was not required at this site and the site was “Not Accepted.”

**4.17 300-13, 350 BUILDING RELEASE TO SANITARY SEWER SYSTEM**

The 300-13, 350 Building Release to Sanitary Sewer System site was located northwest of the 350 Building and was associated with the 300 Area Sanitary Sewer System. In 1993, during normal surveillance activities, a white discoloration of the stream flow was noted. The on-duty power operators discovered a white, milky discoloration of the water inside the lift station. Samples of the water were taken to identify the substance. Samples were analyzed for metals and organics to determine the nature of the substance. The results of the water samples revealed that there was not a discharge of hazardous substance to the Sanitary Sewer. The facility involved in the release to the sanitary sewer indicated the substance released to the sewer

consisted of latex paint that was washed from painting equipment during cleanup activities. Latex paint is not considered to be a hazardous material. Based on this process and sampling information, the 300-13 site was “Not Accepted.”

#### **4.18 300-14, 331 BUILDING ANIMAL WASTE TANK PITS**

The 300-14 waste site included the unlined pit east of the building, a backwash storage tank, and six diversion chambers that are located north of the pit. Originally, the animal waste collection tanks were located in a pit just east of the 331-D Animal Waste Treatment Building. The pit was 28 by 22.3 m (92 by 73 ft) and approximately 7.6 m (25 ft) deep. The tanks have been removed and eight concrete tank pedestals were left in place at the bottom of the pit. A backwash storage tank remained between the 331-D Building and the pit. Six diversion chambers for the sewer system were located northwest of the pit. Radiation surveys of the pit and tank bases were conducted on September 15 and September 16, 1998. Radiological activity measurement results were below the background levels. The 300-14 waste site has been reclassified to “Rejected.”

#### **4.19 300-15, 300 AREA PROCESS SEWER SYSTEM**

##### **4.19.1 History**

The 300-15 waste site was an underground process sewer extending throughout the 300 Area for disposal of process wastes such as steam condensate, cooling water, and nonregulated liquids. The piping consisted primarily of 20-cm (8-in.) vitrified clay pipes and acid proof joints. Many other materials have been used in more recent retrofits and system modifications, including cast iron, stainless steel, carbon steel, and polyvinyl chloride. Large sections of the process sewer were relined with cured-in-place epoxy during the 1995 Project L-070 system upgrade. These process sewer feeder pipes joined larger 46-cm (18-in.)-diameter vitrified clay pipes that discharged to Treated Effluent Disposal Facility (TEDF) sump (600-117:1) northeast of 306E Building. Prior to 1995, the system discharged to the 316-5 Process Trenches, which were constructed in 1975. Before 1975, the process sewers discharged to the north and south process ponds (316-2 and 316-1 waste sites).

Project L-070 upgraded the 300 Area process sewer and retention process sewer systems with a combination of vacuum, gravity, and pressurized piping. The process sewer handled up to 760 L/min (200 gal/min), through rates of 4,900 L/min (1,300 gal/min) were observed during the late 1980s. Other ancillary systems were also part of the 300 process sewer. These systems included the flow monitoring stations, catch basins, sample ports, pumps, and the lift stations.

The three primary contributors to the 300 Area process sewer wastewater were: purified potable water, equipment cooling water, and contributors with some chemical contamination. Flows from buildings were combined into one or two main waste pipes before exiting the building. Steam production activities accounted for a significant part of the waste water produced. These activities produced large quantities of waste cooling water and significant amounts of waste

brine solution. A smaller portion of the flow is from laboratory sinks and drains connected to the sewer.

The 300-15 waste site was divided into the following six subsites:

- 300-15:1, Active and Retained Portions of 300 Area Process Sewer
- 300-15:2, 300 Area Process Sewer North of Apple Street
- 300-15:3, 300 Area Process Sewer South of Apple Street
- 300-15:4, 3906 North Side and 3906-B Lift Stations
- 300-15:5, 310 Retention Transfer System
- 300-15:6, 305A Process Sewer and 24-in Process Sewer Main North of Apple Street.

The 300-15:1 subsite consists of active and retained portions of the 300 Area process sewer and will not be discussed further in this document.

#### **4.19.2 Remedial Action 300-15:2 Subsite**

**4.19.2.1 300-15:2 Excavation Operations.** Remedial action at the 300-15:2 subsite was performed from July 17, 2012, to January 4, 2013. The 300-15:2 subsite was excavated to depths of 0.5 to 4.9 m (1.6 to 16.1 ft) bgs, resulting in approximately 44,716 BCM (54,488 BCY) of soil and debris disposed at ERDF at the Hanford Site.

**4.19.2.2 300-15:2 Verification Sampling.** Verification sampling of the excavated area and the staging pile areas was conducted on July 24 and 25, 2012; December 5, 7, and 10, 2012; and January 2 and 9, 2013. A more detailed discussion of the plan for verification sampling can be found in the *Work Instruction for Verification Sampling of 300-15, Fully Excavated Sections North of Apple Street, 300 Area Process Sewer System* (WCH 2012) and *Work Instruction for Verification Sampling of the 300-15:2, 300 Area Process Sewer, Fully Excavated Sections North of Apple Street Staging Pile Areas* (WCH 2013).

**4.19.2.3 300-15:2 Statement of Protectiveness.** Verification sampling was performed; the analytical results indicate that the residual concentrations of COPCs at this site meet the RAGs and corresponding RAOs for direct exposure, groundwater protection, and river protection. These results show that residual soil concentrations support future land uses that can be represented (or bounded) by an industrial land use scenario and are protective of groundwater and the Columbia River. The 300-15:2 subsite and associated staging pile area do not meet the RAGs and RAOs for unrestricted land use; therefore, institutional controls to maintain industrial land use of the site are required. Site excavation extended slightly into the deep zone soils; however, the remediation footprint was evaluated against the more restrictive shallow zone criteria. Therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep-zone are not required. The 300-15:2 subsite was reclassified to a status of “Final Closed Out.”

**4.19.3 Remedial Action 300-15:3 Subsite**

**4.19.3.1 300-15:3 Excavation Operations.** Remediation of the 300-15:3 and 300-34 waste sites were performed from January 14, 2014, to March 26, 2015. Approximately 73,961 BCM (96,737 BCY) of excavated materials were removed and direct loaded for disposal at ERDF. Waste materials consisted of contaminated soil, gravel, pipe, and concrete. No overburden soil was salvaged from the 300-15:3 subsite and no staging pile areas were utilized. The 300-15:3 pipelines span across a large area south of Apple Street in the 300 Area. Therefore, to prioritize remediation work scope and waste site sampling the 300-15:3 subsite was divided into three decision units.

**4.19.3.2 300-15:3 Verification Sampling.** Verification sampling was performed periodically, as excavation sections within these decision units were remediated and became available for sampling. Verification sampling for the 300-15:3 and 300-34 waste sites was performed on March 28, April 2, May 6, July 18, and December 3, 2014, and January 9, 15, and March 31, 2015. The 300-15:3 subsite was divided into three decision units for verification sampling. In addition two decision units consisting of pipelines remaining in place were sampled for verification purposes. Focused sampling locations were biased towards locations where leaking was most probable. The focused sampling locations were selected based on field observations, targeting worst-case locations. Sampling included locations where elevated radiological soil contamination or discolored soil were associated with the pipeline, at endpoints of the pipeline, pipeline intersections, and valve boxes/cleanouts. A total of 21 verification samples from decision unit 1 locations, 14 verification samples from decision unit 2 locations, and 19 verification samples from decision unit 3 locations were collected.

The two decision units that consisted of pipelines remaining in place were sampled at either end of each designated segment and confirmed that residual contamination was below the CULs. A total of five verification samples from decision unit 2 pipelines remaining-in-place locations and four verification samples from decision unit 3 pipelines remaining-in-place locations were collected.

**4.19.3.3 300-15:3 Statement of Protectiveness.** The contaminated materials from the site have been excavated and disposed of at ERDF. The remaining soil at the 300-15:3 subsite excavated areas has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land use scenario and poses no threat to groundwater or the Columbia River. Verification sampling results for cesium 137, aroclor-1254, and aroclor-1248 exceed the residential direct exposure CULs. Due to this exceedance, the residual contaminant concentrations do not meet human health direct exposure CULs for residential land use in the shallow zone soils. Because the waste site was remediated to achieve CULs for industrial land use, institutional controls to maintain industrial land use are required. The 300-15:3 subsite excavated areas are verified to be remediated and have been reclassified to a status of “Final Closed Out.”

The 300-15:3 subsite pipelines remaining-in-place have been sampled, analyzed, and evaluated. Results indicate that the pipelines support future land uses that can be represented (or bounded) by the residential land use scenario and pose no threat to groundwater or the Columbia River.

Because the pipelines were evaluated and meet the requirements for unlimited use and unrestricted exposure, institutional controls to maintain industrial land use are not required. The 300-15:3 subsite pipelines remaining-in-place are evaluated and have been reclassified to a status of “Final Closed Out.”

#### **4.19.4 Remedial Action 300-15:4 Subsite**

**4.19.4.1 300-15:4 Excavation Operations.** Demolition of the above-grade portion of the 3906 Lift Station was completed in July 2013. The below-grade portion of the 3906 Lift Station was removed to a depth of 0.9 m (3 ft) below grade. The debris was removed and disposed of at ERDF. No portion of the 3906-B below-grade structure was removed because of interference from adjacent and active underground electrical power lines. Both lift stations were backfilled with clean borrow pit material.

**4.19.4.2 300-15:4 Characterization Sampling.** Characterization sampling of the 3906 North Side and 3906-B Lift Station was conducted on March 7, 2013, and July 12, 2013, respectively. A focused sample design was used to characterize the 3906 North and 3906-B Lift Stations. A focused sample of the sludge present in each of the 3906 and 3906-B Lift Stations was collected for characterization sampling. The results of the characterization sampling indicated that the sludge in the 3906 North and 3906-B Lift stations does not require removal and the below-grade structures meet the cleanup criteria and are acceptable for leaving in place.

**4.19.4.3 300-15:4 Statement of Protectiveness.** The 300-15:4 subsite has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land use scenario and poses no threat to groundwater or the Columbia River. Sampling results for aroclor-1254, aroclor-1260, benzo(a)pyrene, and cobalt detected in the 3906 North Side Lift Station exceed the residential direct exposure CUL. Due to these exceedances, the residual contaminant concentrations do not allow for unlimited use and unrestricted exposure. Therefore, institutional controls to maintain industrial land use are required. Based upon the evaluation of the characterization sampling, the 300-15:4 subsite has been reclassified to a status of “Final No Action.”

#### **4.19.5 Remedial Action 300-15:5 Subsite**

**4.19.5.1 300-15:5 Characterization Sampling.** Smear samples were collected of pipe internals where the process sewer exited the 342 Collection Sump and where it entered LS-10. During sampling, it was determined there was insufficient sediment or scale material existing within the pipe, so smears were taken in lieu of sediment samples. Analytical results for the smears showed contaminants were present at low levels. In order to achieve a direct comparison with CULs, a second set of samples were collected on September 22, 2014. These samples included both pipe coupons and beneath-pipe soils at the former 342 Complex and 310 TEDF. Because the LS-10 lift station remains in service, no other samples were taken. However, no piping enters the 310 TEDF to LS-10 line downstream of the 310 sample location; therefore, the samples collected at 310 are considered representative of the entire length back to LS-10.

**4.19.5.2 300-15:5 Statement of Protectiveness.** Results from the 300-15:5 subsite indicate that the site supports future uses that can be represented (or bounded) by the residential land use scenario and poses no threat to groundwater or the Columbia River. Because the subsite meets the requirements of a residential land use scenario, institutional controls are not required.

The known operational history of the 310 TEDF/310 RTD and associated process sewer piping, quantitative characterization of the 310 TEDF influent contaminants, qualitative data from smear samples at piping segments left in place, and quantitative data from pipe coupons and soils are supportive of reclassification of the 300-15:5 subsite to “Final No Action.”

#### **4.19.6 Remedial Action 300-15:6 Subsite**

**4.19.6.1 300-15:6 Excavation Operations.** Remediation of the 300-15:6 subsite was performed between December 1, 2014, and March 19, 2015. A small 3-m (9.8-ft) long segment of the 300-15:2 pipeline subsite that was retained during the 300-15:2 subsite remediation due to the proximity to the 351 Substation was also removed. This segment of pipeline was identified in the 300-15:2 remaining sites verification package as being reassigned to the 300-15:1 subsite to be addressed with other retained piping. However, due to remedial action activities near the 351 Substation, the pipeline segment was removed and disposed at this time. The entire remediation extended to an approximate maximum depth of 5.5 m (18 ft) bgs, resulting in approximately 15,125 BCM (19,783 BCY) of excavated waste materials being removed and direct loaded for disposal at ERDF. Waste materials consisted of soils, clay tile piping, and concrete. No overburden soil was salvaged from the 300-15:6 subsite excavation and no staging pile areas were utilized.

**4.19.6.2 300-15:6 Verification Sampling.** Following remediation, verification sampling was performed on March 30, 2015. The focused sampling locations were biased towards locations where leaking was most probable, such as where the pipeline appears to have lost integrity, endpoints of the pipelines, pipeline intersections, and at manholes. Verification soil samples were collected from 12 locations.

GPERS surveys were also performed within the 300-15:6 subsite excavation following the site remedial action. No elevated radiological activity was detected.

**4.19.6.3 300-15:6 Statement of Protectiveness.** The contaminated materials from the site have been excavated and disposed of at ERDF. The remaining soil at the 300-15:6 subsite has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land use scenario and poses no threat to groundwater or the Columbia River. The verification sampling results for one sample exceed the residential direct exposure CUL for aroclor-1260. Due to this exceedance, the residual contaminant concentrations do not meet human health direct exposure CULs for residential land use in the shallow zone soils. Because the waste site was remediated to achieve CULs for industrial land use, institutional controls to maintain industrial land use are required.



The 300-15:6 subsite is verified to be remediated in accordance with the 300 Area ROD and have been reclassified to a status of “Final Closed Out.”

#### **4.20 300-16, SOLID WASTE NEAR 314 BUILDING, CONTAMINATION FOUND DURING UTILITY POLE REPLACEMENTS**

##### **4.20.1 History**

The 300-16 waste site consisted of utility poles that surrounded the 314 Building. The poles were cut at ground level in 2005 and are no longer visible from the surface. Three utility poles were identified and each assigned to a separate subsite:

- 300-16:1, Utility Pole Northwest of 314 Building
- 300-16:2, Utility Pole East of 314 Building
- 300-16:3, Utility Pole southeast of 314 Building.

On March 6, 1992, May 4, 1994, and September 22, 1995, radioactive contamination (yellow-cake uranium) was discovered on the bottom ends of several utility poles that had been removed. A walkdown in the vicinity of the 314 Building in June 1995 found the area to be mostly paved with a few areas of exposed soil. The area was posted as an underground radioactive material area.

During the operational lifetime of the 314 facilities, numerous processes were conducted within the main facility and attached structures. An oxide burner was used to prevent uranium scraps and uranium dust from oxidizing in an uncontrolled fashion. The oxide burner produced a fine uranium oxide ash that is thought to have spread in and around the former 314 Building and has been blamed for various instances of contamination in the surrounding area. In the late 1950s, a fire in the 314 Building occurred. Water used to suppress the fire may have been responsible for washing fine-grained uranium and uranium oxide ash out of the 314 facilities and into the surrounding subsurface soils where the 300-16 utility poles penetrated the surrounding asphalt pavement.

##### **4.20.2 Remedial Action 300-16:1 Subsite**

**4.20.2.1 300-16:1 Excavation Operations.** Remediation in the vicinity of the 300-16:1 utility pole was conducted in 2011. The excavation extended approximately 1.5 m (5 ft) below grade at the utility pole. There was no waste staging pile area footprint or overburden soil stockpile associated with this waste site. All removed materials were disposed via direct loadout to ERDF.

**4.20.2.2 300-16:1 Verification Sampling.** Verification sampling for the 300-16:1 waste site was performed on October 25, 2011. Because of the small size of the site a statistical sampling method was not used. A single focused sample consisting of four aliquots of soil was collected from within 1 m (3.3 ft) of the former location of the utility pole.

**4.20.2.3 300-16:1 Statement of Protectiveness.** The contaminated materials from the site have been excavated and disposed at ERDF. The remaining soil at the 300-16:1 subsite has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land use scenario and poses no threat to groundwater or the Columbia River. The 300-16:1 subsite was reclassified to a status of “Final Closed Out.”

#### **4.20.3 Remedial Action 300-16:2 Subsite**

**4.20.3.1 300-16:2 Excavation Operations.** Remediation of 300-16:2 subsite was performed from December 21, 2009, to May 20, 2010, and was included in the removal of the 300-24, 300-80, and 300-218 waste sites. The excavation consisted of removal of the contaminated soils, concrete, and debris under and around the former 314 Buildings. The excavation reached a maximum depth of 3 m (9.8 ft) near the center and at the southwest corner of the area encompassing the collective waste sites, resulting in approximately 6,275 m<sup>3</sup> (14,995 tons) of soil disposed at ERDF.

**4.20.3.2 300-16:2 Verification Sampling.** Verification sampling within the excavation area was conducted on March 30, 2011. The excavation area footprint was the only decision unit identified for the 300-16:2, 300-24, 300-80, and 300-218 waste sites for verification sampling. In addition to performing statistical sampling of the remedial footprint, one focused soil sample was collected at the location where the utility pole associated with the 300-16:2 subsite was removed.

**4.20.3.3 300-16:2 Statement of Protectiveness.** The contaminated materials from the site have been excavated and disposed at ERDF. The remaining soil at the 300-16:2 subsite has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land use scenario and poses no threat to groundwater or the Columbia River. The 300-16:2 subsite was reclassified to a status of “Final Closed Out.”

#### **4.20.4 Remedial Action 300-16:3 Subsite**

**4.20.4.1 300-16:3 Excavation Operations.** The demolition of the 303A, 304, 304A, 303B, 3732, 303C, 3707D, and 303E Building foundations began on June 1, 2010, and was completed by June 24, 2010. The 300-28, 300-43, 300-48, 300-249, and 300-16:3 excavation of building foundations, associated pipelines, and soils began on June 28 and was completed by July 29, 2010.

Due to elevated radiologically contaminated soil found north of 303E Building, additional remediation was performed September 30, 2010, targeting specific locations with elevated readings. The excavation of the 300-28, 300-43, 300-48, 300-249, and 300-16:3 waste sites resulted in a total of approximately 2,914 BCM (3,811 BCY) of contaminated soil and debris.

**4.20.4.2 300-16:3 Verification Sampling.** Verification sampling for the 300-28, 300-43, 300-48, 300-249, and 300-16:3 waste sites were conducted on August 23, 2011. The 300-28, 300-43, 300-48, 300-249, and 300-16:3 waste sites consisted of an excavation footprint area for verification sampling. Statistical sampling design was applied to the excavation footprint. Twelve statistical soil samples were collected on the grid within the excavation footprint.

The GPERS survey was performed on March 9, 2011, to confirm that waste site excavation was complete. The screening discovered low levels of radiation north and south of the former location of the 303E Building. Elevated readings (above background levels) were detected. Focused sample data was used as a component of site closeout. Five focused sample locations were added as a component of site closeout to verify the identified above-background beta and gamma contamination. The five locations represented the areas within the waste site excavation that had remaining beta contamination greater than 413 counts per minute (cpm) and gamma contamination greater than 1,230 cpm in the final GPERS data.

**4.20.4.3 300-16:3 Statement of Protectiveness.** The contaminated materials from the site have been excavated and disposed at ERDF. The remaining soil at the 300-16:3 subsite has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land use scenario and poses no threat to groundwater or the Columbia River. The 300-16:3 subsite was reclassified to a status of “Final Closed Out.”

## **4.21 300-17, 331 BUILDING TRENCH, 331-D DITCH, OUTFALL A**

The 300-17 site was a ditch that ran from the southeast corner of the 331-D Building to the top of the west bank of the Columbia River. The ditch was fed by an underground pipe which drained stormwater from the roadway between the north side of the 331-C Building and the south side of the 331 Building. The open trench was piped to a culvert passing beneath a gravel roadway and the perimeter fence. The discharge was approximately 46 m (150 ft) from the river. The bank was moderately sloped with natural vegetation. The outfall resulted from a nonindustrial source and the site was identified as a point source conveyance to Outfall A, addressed by Hanford Site Stormwater Pollution Prevention Plan. This plan addresses all potential pollution to the Columbia and Yakima Rivers that might occur as a result of stormwater runoff. The site is “Not Accepted.”

## **4.22 300-18, SCA #4, SURFACE CONTAMINATED AREA #4**

### **4.22.1 History**

The 300-18 waste site was located approximately 240 m (800 ft) south of the TEDF. This site was identified during routine surveillance activities in 1993 as an approximately 4.6- by 6.1-m (15- by 20-ft) area containing radiologically contaminated soil, metal shavings, nuts, bolts and concrete. Following radiological surveys, the site was covered with 0.45 to 0.6 m (1.5 to 2 ft) of

soil for surface stabilization and posted as an underground radioactive material area. The area was approximately 12 by 12 m (40 by 40 ft).

#### **4.22.2 Excavation Operations**

Remedial action at the 300-18 site began in December 2004. Excavation of the site included the removal of small quantities of metal shavings, miscellaneous construction-type debris, and soil. No indications of liquid waste disposal or land disposal restricted materials were observed during excavation. Remedial action excavation was completed in February 2005, with approximately 392 metric tons (432 US tons) removed for transport to ERDF.

#### **4.22.3 Verification Sampling**

Final cleanup verification samples were collected on May 25, 2005, to confirm acceptability of residual contaminant concentrations in soil at the 300-18 site. Based on the overall footprint of the area and depth of excavation, the 300-18 site was classified as one shallow zone decision unit. Radiological surveying and statistical verification sampling was performed for site closeout.

#### **4.22.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed at ERDF. The remaining soil at the 300-18 waste site has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the residential land use scenario and poses no threat to groundwater or the Columbia River. The 300-18 waste site was reclassified to a status of "Final Closed Out."

### **4.23 300-21, 333 BUILDING UNDERGROUND LIMESTONE TANK**

The 300-21 waste site was an underground storage tank (UST) that held limestone used to neutralize acid wastes. The tank was located east of the 333 Building and north of the 334 Tank Farm. The 334A Building was built where the tank had been located. The Waste Acid Treatment System (WATS) limestone neutralization tank leaked and was removed in 1973. Some contaminated soil was removed at the time of removal. Additional contaminated soil was removed during the excavation for the 3-m (10-ft) deep tank pit for the 334-A Facility, which was constructed over the former site of the failed underground limestone tank. The site is "Not Accepted."

### **4.24 300-22, 309 BUILDING B-CELL CLEANOUT LEAK**

#### **4.24.1 History**

The 300-22 waste site was an unplanned release of contaminated liquid from a parted hose coupling that contaminated the ground outside the emergency airlock of the 309 primary

containment vessel on September 20, 1962. The 300-22, 300-255, and UPR-300-5 waste sites are all within the 309 PRTR Building excavation area. Demolition of the facility and remediation of the underlying soils included the area of these three waste sites where unplanned releases of contaminated liquids occurred. The 309 PRTR was an 85 vertical tube heavy water-moderated, light water-cooled 70-MW nuclear reactor.

#### **4.24.2 Excavation Operations**

Remediation of the 300-22, 300-255, and UPR-300-5 waste sites, along with the demolition of the 309 PRTR containment structure, was performed from March 12, 2014, to February 12, 2015. The excavation resulted in removal of approximately 78,120 BCM (102,177 BCY) of contaminated materials. All material was direct loaded for disposal at ERDF. The 300-22, 300-255, and UPR-300-5 waste sites were excavated to a depth of 11 m (36 ft) bgs. Excavated materials consisted of soil, gravel, concrete, piping, and other demolition debris. No overburden soil was salvaged from the waste site excavation and no staging pile areas were utilized.

#### **4.24.3 Verification Sampling**

Verification sampling within the 300-22, 300-255, and UPR-300-5 waste sites was performed on April 23 and 27, 2015. The two deep zone and two shallow zone areas of the 300-22, 300-255, and UPR-300-5 waste sites were delineated in the Visual Sample Plan software and used as the basis for the location of a random-start systematic grid for verification soil sampling. Twelve statistical soil samples were collected from each of the four decision units.

#### **4.24.4 Statement of Protectiveness**

The contaminated materials from these sites have been excavated and disposed of at ERDF. The remaining soil at the 300-22, 300-255, and UPR-300-5 waste sites has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the residential land use scenario and poses no threat to groundwater or the Columbia River. Although the 300-22, 300-255, and UPR-300-5 waste sites are in the industrial portion of the 300 Area, the current site conditions achieve the residential land use CULs and RAOs established by the 300 Area ROD. The results of verification sampling show that residual contaminant concentrations meet human health direct exposure CULs for residential land use and applicable standards for groundwater and river protection in the shallow zone (i.e., surface to 4.6 m [15 ft] deep). These sites meet the requirements for unlimited use and unrestricted exposure; institutional controls to maintain industrial land use are not required. The 300-22, 300-255, and UPR-300-5 waste sites have been reclassified to a status of “Final Closed Out.”

### **4.25 300-23, PRTR DIESEL STORAGE TANK, 309-1 UST**

The 300-23 waste site was a tank that held diesel fuel used to power the PRTR emergency generator located inside the 309 Building. The tank was located approximately 6.1 m (20 ft)

south of the 309 Building and next to the main entrance of the 309 Building. The tank was installed in 1959, and taken out of service in 1969. Residual diesel fuel and water remained in the tank. The tank was removed on August 24, 1996. The results of the site assessment indicated that a confirmed release of a regulated substance did not occur. The site has been reclassified to “Closed Out.”

#### **4.26 300-24, SOIL CONTAMINATION AT THE 314 METAL EXTRUSION BUILDING**

##### **4.26.1 History**

The 300-24 waste site was the area around the 314 Building, which in June 1995 was found to be posted with underground radioactive material signs. Uranium metal dust from the fuel fabrication activities in the 314 Metal Extrusion Building and the ash from the associated oxide burner operations caused the spread of contamination, which was deposited around the 314 Building. Excavations for new utilities in June 1994 measured soil contamination near the southwest corner of the 314 Building at 600,000 disintegrations per minute (dpm) beta/gamma and 350 dpm alpha. Similarly, an excavation in June 2001 on the south side of the 314 Building encountered soils containing approximately 557 pCi/g of uranium.

##### **4.26.2 Excavation Operations**

Remedial action activities at the 300-16:2, 300-24, 300-80, and 300-218 waste sites were carried out from December 21, 2009, to May 20, 2010. The excavation reached a maximum depth of 3 m (9.8 ft) near the center and southwest corner of the collective waste sites. Approximately 6,275 m<sup>3</sup> (14,995 tons) of materials were removed from the excavation and direct loaded for disposal at ERDF. There was no waste staging pile area footprint or overburden soil stockpile associated with these waste sites.

##### **4.26.3 Verification Sampling**

Verification sampling for the 300-16:2, 300-24, 300-80, and 300-218 waste sites was performed on March 30, 2011. The excavation area footprint was the only decision unit identified for the 300-16:2, 300-24, 300-80, and 300-218 waste sites for verification sampling. Twelve statistical soil sample locations were identified.

##### **4.26.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed at ERDF. The remaining soil at the 300-16:2, 300-24, 300-80, and 300-218 waste sites has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land use scenario and poses no threat to groundwater or the Columbia River. The 300-24 subsite was reclassified to a status of “Final Closed Out.”

**4.27 300-25, 324 BUILDING**

The 300-25 waste site is synonymous with the 324 Chemical and Materials Engineering Laboratory. The 300-25 waste site was assigned to a physical structure and was not considered an unplanned release, nor did it otherwise represent contaminated media adjacent to or beneath the building. Demolition scope is considered under the structure of the 324 Building. The 324 Building is covered by a CERCLA removal action and this facility did not represent a separate waste site under the TPA-MP-14 process. The TPA-MP-14, Rev. 2, dated September 1, 2011, states that buildings/facilities that do not contain a TSD unit shall not be documented in WIDS. This facility contained no permitted TSD units and did not meet TPA-MP-14 criteria. Therefore, the 300-25 waste site has been reclassified to “Rejected.”

**4.28 300-26, POWERHOUSE FUEL OIL SPILL, 384 POWERHOUSE #6 FUEL OIL SPILL DELIVERY TRUCK SPILLAGE ON ROADS**

The 300-26 waste site was an unplanned release. After refueling of the 366 Fuel Oil Bunkers, an offsite vendor’s fuel oil truck spilled #6 fuel oil during departure onto the gravel and paved road. The date of the spill was December 31, 1991. The #6 fuel oil is a high viscosity material (black or dark brown in color) that was heated by steam lines in order to allow pumping from the fuel bunkers to the powerhouse. Following the unplanned release, the trucking firm was contacted to perform cleanup activities. The puddled areas of the spills were cleaned up with absorbent materials and disposed of by the vendor. There is no available information that indicated the volume of material spilled or the methods that were used for the cleanup.

The area of the release was previously used as a coal pile for the 384 Powerhouse. The soil was stained dark from coal dust. There was no visible evidence of the #6 fuel oil spill in the area. On the south side of the site adjacent to Apple Street there was an Underground Radioactive Material sign and a buried gas pipeline. Based on this information, the 300-26 waste site has been reclassified to “Rejected.”

**4.29 300-27, SOIL CONTAMINATION AT 329 BIOPHYSICS LABORATORY**

The 300-27 waste site consisted of radioactive contamination that was found at the site during a routine survey on August 14, 1991. A radiation protection technologist found radioactive contamination levels of approximately 40,000 dpm beta-gamma in a 0.09 m<sup>2</sup> (1-ft<sup>2</sup>) area of soil. The source of the contamination was unknown. The site was an area of crushed rock gravel with no vegetation located near the outside wall of the 329 Building. There were no hazard postings at this location. There was no visible evidence of radioactive contamination that was removed from this site. A cement pad with liquid argon tank has been constructed adjacent to the site. The contamination area was marked with spray paint, covered with plastic sheeting, and the area was roped off. A suitable temporary containment structure was constructed. The site was excavated to determine the extent and to remove the contamination problem. All contaminated

soil was removed via a 208-L (55-gal) drum. This work was completed on November 8, 1991. Based on this information the site was reclassified as “Rejected.”

#### **4.30 300-28, CONTAMINATION FOUND ALONG GINKO STREET, SOLID WASTE SITE NEAR 303-G BUILDING**

##### **4.30.1 History**

The 300-28, Contamination Found Along Ginko Street, Solid Waste Near 303-G Building waste site consisted of contaminated asphalt and soil beneath Ginko Street. The dimensions of this waste site were estimated to be approximately 168 m (551 ft) long and 6.5 m (21.3 ft) wide. The radioactively contaminated soil was found just beneath the asphalt paving. Some patches of new asphalt were visible where utility trenches were excavated.

The 300-28 waste site contamination was associated with activities in the 314, 333, 3715, 304, and the 303 (A, B, C, G, and K) Buildings. In 1994, underground contamination was discovered during excavation activities associated with the installation of a fiber-optic phone system. Contaminated soils were encountered just below the asphalt paving. No contamination was found beyond the 306 W Building. In 1996, a decision was made to post the 300 Area perimeter fence with “Underground Radioactive Contamination” signs, to eliminate the need for multiple, individual area postings within the 300 Area.

##### **4.30.2 Excavation Operations**

The demolition of the 303A, 304, 304A, 303B, 3732, 303C, 3707D, and 303E Building foundations began on June 1, 2010, and was completed by June 24, 2010. The 300-28, 300-43, 300-48, 300-249, and 300-16:3 excavation of building foundations, associated pipelines, and soils began on June 28 and was completed by July 29, 2010. Due to elevated radiologically contaminated soil found north of the 303E Building, additional remediation was performed September 30, 2010, targeting specific locations with elevated readings. The excavation of the 300-28, 300-43, 300-48, 300-249, and 300-16:3 waste sites resulted in a total of approximately 2,914 BCM (3,811 BCY) of contaminated soil and debris. All material was direct loaded for disposal at ERDF.

##### **4.30.3 Verification Sampling**

The 300-28, 300-43, 300-48, 300-249, and 300-16:3 waste sites consisted of excavation footprint area for verification sampling. Statistical sampling design was applied to the excavation footprint. Twelve statistical soil samples were collected on the grid within the excavation footprint. Focused sample data was used as a component of site closeout. The excavation surveyed on March 9, 2011, confirmed that waste site excavation was complete. The screening discovered low levels of radiation north and south of the former location of the 303E Building. Elevated readings (above background levels) were detected, and focused samples were taken from the five locations with elevated readings. The five locations represent the areas within the



waste site excavation that have remaining beta contamination greater than 413 cpm and gamma contamination greater than 1,230 cpm in the final GPERS data.

#### **4.30.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed at ERDF. The remaining soil at the 300-16:2, 300-24, 300-80, and 300-218 waste sites has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land use scenario and poses no threat to groundwater or the Columbia River. The 300-28 waste site was reclassified to a status of “Final Closed Out.”

#### **4.31 300-29, 305-B BERM, SOURCE LOCATION OF UPR-600-11 CONTAMINATED SOIL**

The 300-29 waste site consisted of a U-shaped soil berm that surrounded the east wing of the 305-B Chemical Waste Storage Building. No radiological postings were present. On May 29, 1980, contaminated rubble was detected in a berm that was being excavated at the 305-B Chemical Waste Storage Building. Low-level beta-gamma contamination (600 to 4000 cpm) was discovered in a small amount of blacktop rubble on the south side of the berm.

Following the identification of contaminated material in 1980, work was stopped and the area carefully surveyed. All of the remaining contaminated blacktop was removed from the berm and the area was released from radiation zone status. Additional excavated material was surveyed by a Radiation Monitor. Portions of the berm material were sent to ERDF with 305B demolition waste and the remainder was used as backfill. A radiological survey done in August 1998 did not find any detectable contamination on the berm surface. No institutional controls were identified for this site at the time of closeout. Because the 300-29 waste site is within the industrial land use area, institutional controls are required. Based on this information, the 300-29 waste site was reclassified as “Final No Action.”

#### **4.32 300-30, 3705 PHOTOGRAPHY BUILDING**

The 300-30 waste site consisted of the 3705 Building, which was used to process personnel dosimetry badges and meters. Various radioactive sources were kept and used at the facility. In 1968, a 1.96 microcurie americium-241 source was found to be ruptured. Contamination was found in the northwest corner of the building and was subsequently cleaned up. Beginning in the early 1970s, the facility provided photographic services, including still camera assignments, color slides work, contract printing, and black and white or color enlargements. The facility contained a silver reclamation unit that was used to treat the spent photo processing chemicals and recover the silver for recycling. The building was connected to the process sewer and the sanitary sewer. All process sewer connections were capped when the building was remodeled, probably between 1988 and 1990. Nonhazardous/nonregulated process wastewater was no longer discharged to the sanitary sewer. The effluent was collected in drums and shipped offsite

for disposal. Waste streams to the process sewer were eliminated. The silver reclamation effluent stream was collected and shipped offsite. The only known release contained within the facility was cleaned up; therefore, the 300-30 waste site has been reclassified to “Rejected.”

### **4.33 300-32, 333 BUILDING, 333 N FUELS MANUFACTURING BUILDING, NEW FUEL CLADDING FACILITY, 333 BUILDING REMAINING SOILS**

#### **4.33.1 History**

The 300-32 waste site consisted of the remaining contaminated components of the former 333 Building, including the concrete pad, subgrade soil, and piping. The 333 Building was located north of Ginko Street; east of the 3720 Building; and west of the 303M, 334-A Building and 334 Tank Farm. This waste site was not associated with 618-1, located to the east of the 300-32 waste site.

#### **4.33.2 Excavation Operations**

Demolition of the 333 Building above-grade structure was completed in September 2006. The 333 Building slab was removed to 1 m (3.3 ft) bgs, with the exception of the Loewy Press Pit. The Loewy Press was removed in February 2008. The Press Pit was demolished to 1 m (3.3 ft) bgs in July 2010 and disposed of at ERDF. The remaining below grade structure of the Loewy press pit was left in place. The excavation of the press pit area of the 300-32 waste site resulted in a total of approximately 398 BCM (521 BCY) of contaminated soil and debris being removed. All material was direct loaded for disposal at ERDF.

#### **4.33.3 Confirmatory Sampling**

Fifteen focused soil samples were collected for confirmatory sampling purposes. Confirmatory sample results indicated that the focused sample collected at location 15 exceeded the direct exposure cleanup level for TPH. Remediation was performed in January 2013 to remediate the area at sample location 15 and to remove additional soil surrounding the perimeter of the Loewy Press Pit. The additional removal extended 1 m (3.3 ft) beyond the perimeter of the press pit concrete foundation. The final depth of the 300-32 waste site excavation at the press pit location was 2 m (6.6 ft).

#### **4.33.4 Verification Sampling**

Following additional remediation, verification sampling was conducted on January 3, 2013. A focused sampling approach was combined with composite sampling to evaluate the soils surrounding the Loewy press pit foundation. The excavated area surrounding the press pit foundation was divided into two equal halves for sampling purposes. One composite sample was collected from each half of the excavated area. Each sample consisted of 25 aliquots collected across the surface of each half of the excavation. In addition, one focused soil sample was

collected from sample location 15, which had exceeded the TPH remedial action goals during confirmatory sampling.

Radiological field screening for beta activity was also conducted at the 300-32 waste site on January 5, 2013, using direct survey techniques, transferability surveys, and technical smears. The survey was performed for down posting purposes, screening the excavation area, and for the concrete monolith and pipe penetrations. No fixed or removable contamination was found. Beta survey activity of 12,000 dpm/100 cm<sup>2</sup> was identified at a single location. However, it was determined that this was due to a metal shard present inside the excavation. Following the removal of the metal shard, a verification radiological screening survey was performed. The survey results did not indicate any significant residual beta radiological activity.

#### **4.33.5 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed at ERDF. The remaining soil at the 300-32 waste site has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the residential land use scenario and poses no threat to groundwater or the Columbia River. The 300-32 waste site was reclassified to a status of “Final Closed Out.”

### **4.34 300-33, SCA #4, SURFACE CONTAMINATED AREA #4**

#### **4.34.1 History**

The 300-33, 306W Metal Fabrication Development Building Releases waste site consisted of the contaminated soil around and under the 306W Building. The area around the 306W Building was paved and posted as having underground radioactive contamination. The 306W Building was completed in 1956 as the Metallurgical Semi-Works. The building contained metallurgical equipment and a fuel element pilot plant. The 306W Building’s mission was to support 313 Building operations and to pilot test process improvements in single-pass reactor fuel fabrication methods.

#### **4.34.2 Excavation Operations**

Remediation of the combined 300-33, 300-256, and 300-41 waste sites occurred between July 10 and November 9, 2009. The remediation activities included the removal of the neutralization tank, valve pit, soil, and other debris within the footprint of the 306E/W Building and partial removal and backfill of the 306E Building assembly pit. The site was excavated a depth of 1.5 m (4.9 ft) below grade, resulting in approximately 17,436 BCM (22,806 BCY) of material removed for disposal at ERDF. No overburden or waste staging piles were associated with the 300-33, 300-256, and 300-41 waste sites. All excavated materials were directly loaded for disposal to ERDF.

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The 300-33 and 300-256 combined waste sites included four pits ranging from 3 to 16 m (12 to 45 ft) below the concrete slab surface of the 306 Building. The four pits included the tube pit located in Room 172 of the 306E Building, the assembly pit located in the western high bay of the 306E Building, the furnace pit located in the northwestern corner of the 306E Building, and the press pit located in the northeastern corner of the high bay.

Field observations during excavation and the sorting of material indicated the generally expected construction debris. Six anomalies were discovered during excavation processes. Three 113.6-L (30-gal) drums of solid material were found along the western wall of the 306E/W Building footprint. These containers were staged in a radioactive material area in the 300 Area. Two areas of anomalous stained soil were also found in the general area of the drums. These red-colored soils were located around the concrete slab near the drums. The final discovered anomaly was purple stained concrete. The anomalous soil and concrete were sampled, characterized, and disposed at ERDF.

### 4.34.3 Verification Sampling

Verification sampling for the 300-33, 300-256, and 300-41 waste sites was performed on May 6, 2010. The excavation footprint was the only decision unit identified for the combined 300-33, 300-256, and 300 41 waste sites. Twelve statistical soil samples were collected on the grid within the remediation footprint at the 300-33, 300-256, and 300-41 waste sites.

### 4.34.4 Statement of Protectiveness

The contaminated materials from the site have been excavated and disposed at ERDF. The remaining soil at the 300-33 waste site has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the residential land use scenario and poses no threat to groundwater or the Columbia River. The 300-33 waste site has been reclassified to “Final Closed Out.”

## 4.35 300-34, 300 AREA PROCESS SEWER LEAK (FOUND DURING PROJECT L-070 EXCAVATION AT MANHOLE PS-87)

### 4.35.1 History

The 300-34 waste site was an unplanned release from the 300-15 Process Sewer pipeline. The unplanned release was discovered on December 12, 1995, during an excavation for the installation of a new manhole (PS-87) as part of the 300 Area Process Sewer Upgrade project. The 300-34 waste site was directly north of the main entrance to the 3506-B Building in a parking area for the 3506-A and 3506-B Buildings. A leak from a cracked portion of the process sewer is suspected to have resulted in the contaminated soil found during the PS-87 manhole installation. The cracked portion had been patched with grout prior to the discovery of contaminated soil in 1995, possibly when it was originally installed. The broken pipe was replaced with a section of polyvinyl chloride piping. Contaminated soil was discovered at a

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depth of 3.6 m (12 ft) near the location of manhole PS-87. The maximum contamination identified in the soil was 10,000 dpm. Soil sample results reported 525 pCi/g and 91 pCi/g total alpha. When installing the PS-87 manhole, contaminated soil was removed from the excavation and placed temporarily into drums. After the manhole installation and pipe replacement was complete, the contaminated soil was removed from the drums and returned to the excavation at about the same location.

### 4.35.2 Excavation Operations

Remediation of the 300-15:3 and 300-34 waste sites was performed from January 14, 2014, to March 26, 2015. Approximately 73,961 BCM (96,737 BCY) of excavated materials were removed and direct loaded for disposal at ERDF. The 300-34 waste site is located within the larger 300-15:3 subsite excavation; therefore, the remediation volume is combined for these two waste sites.

### 4.35.3 Verification Sampling

Verification sampling for the 300-15:3 and 300-34 waste sites was performed on March 28, April 2, May 6, July 18, and December 3, 2014, and January 9, 15, and March 31, 2015. The 300-15:3 subsite verification sampling approach also addressed the 300-34 unplanned release waste site. One focused soil sample was collected from the 300-34 waste site location within the 300-15:3 subsite and 300-34 waste site excavation.

### 4.35.4 Statement of Protectiveness

The contaminated materials from the site have been excavated and disposed of at ERDF. The remaining soil at the 300-15:3 subsite excavated areas and 300-34 waste site has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land use scenario and poses no threat to groundwater or the Columbia River. Because the waste site was remediated to achieve CULs for industrial land use, institutional controls to maintain industrial land use are required. The 300-34 waste site has been reclassified to “Final Closed Out.”

## 4.36 300-35, 3706A FUEL STORAGE TANK

The 300-35 waste site consisted of an abandoned underground fuel storage tank. A 0.51- by 0.51-m (1.7- by 1.7-ft) concrete block and sign (at the tank fill connection location) marked the location of the underground tank. The sign on the tank indicated that this was an empty 1,117.5-L(300 gal) underground diesel fuel tank. The UST was used to support emergency generator operations for heating, ventilation, and air conditioning. The tank was pumped and closed in place. A message on February 10, 1995, from Ted Wooley of the Washington State Department of Ecology stated that “It appears that the information provided would allow exemption (e.g., abandonment or closure prior to December 22, 1998) under *Washington Administrative Code* (WAC) 173-360.” A second email on March 15, 1995, stated that “after

re-evaluating the data, Ecology agrees that the appropriate disposal steps were taken with the waste water collected. Moreover, closure of the tank in place can serve as final closure of the tank.” Based on this information, the 300-35 waste site has been reclassified to “Closed Out.”

#### **4.37 300-36, 384 POWERHOUSE OIL RELEASE TO FRENCH DRAIN**

The 300-36 waste site consisted of an unplanned release to a french drain. The french drain received condensate return from the steam heating system that went to the fuel oil bunkers (site 300-36). On August 2, 1995, a french drain north of the 366 Building was observed by operations personnel to be overflowing. When the employee lifted the drain lid, oil was noted floating on top of the water. Since the source of the water in the drain was condensate return from the oil bunker steam heating system, the oil indicated a tube bundle failure. Minimal amounts of oil indicated the steam heater coil failure was identified a short time after it began. Response action included isolating the steam to the underground fuel oil bunkers and removing the oil contaminated rocks and soil. Oil in the french drain was also removed. Clean dirt was used to backfill the area where material was removed. Based on this information the 300-36 site was “Not Accepted.”

#### **4.38 300-37, PCB LEAK TO SOIL ADJACENT TO 335A**

The 300-37 waste site consisted of a PCB leakage first identified in April 1993 by electrical utilities personnel. The leakage was observed at two fittings, one being the lower drain valve located near the edge of the concrete pad. The leaks appeared to be small and old, presumably pre-1987. The leaking fittings were covered over with a dirty grease-like coating. There was no visual evidence of oil on the concrete pad or soil surrounding the pad. In addition, there was no distinctive PCB odor at the leak site.

The rectifier was drained on August 2 and 4, 1993. The fluid contained a PCB level of 680,000 parts per million. The amount of oil in the rectifier at delivery was indicated on the unit at 6,113 L (1,615 gal). The amount of fluid removed, approximately 5,867 L (1,550 gal), was consistent with the fill data provided on the unit. The 246-L (65-gal) differential is typical of the quantity of oil that cannot be removed from the rectifier cooling coils. This fluid and the drained carcass were shipped offsite to a licensed PCB disposal facility.

After removal of this material, the concrete pad was smeared and PCB contamination of 12,000 parts per million was found in the area below the suspect fittings. On July 19, 1994, the concrete pad was removed, packaged into drums, and shipped offsite for disposal as PCB contaminated waste. Crews also removed soil, approximately 2.4 by 2.4 by 0.3 m (8 by 8 by 1 ft) deep, and sampled this soil for PCBs. The soil was also visually inspected during removal. There was no visual evidence of oil in the soil, nor was the distinctive PCB odor present. The sample results were erroneously read as 140 and 190 parts per million but were actually reported parts per billion. Since these analyses are normally reported in parts per million, the results interpreted as parts per million values warranted more sampling.

Another 0.3 m (1 ft) of soil was removed and sampled. The sample results for these samples were 520 parts per billion and 3,200 parts per billion.

The cleanup of the 335 Area was performed in accordance with the requirements of the *Toxic Substances Control Act* in that the rectifier, PCB material, contaminated concrete, and contaminated soil was disposed of appropriately. This waste site was initially reclassified as “Closed-Out.” However, there is no RCRA or CERCLA decision document for this site; therefore, the waste site reclassification was revised to “Rejected” in 2013.

#### **4.39 300-39, 309 BUILDING EX-VESSEL IRRADIATED FUEL STORAGE BASIN, 309 BUILDING IRRADIATED FUEL STORAGE BASIN, 309 FUEL STORAGE BASIN**

The 300-39 waste site is synonymous with the 309 Building. The fuel storage basin was empty, and all fuel handling and storage equipment had been removed. Gates, stop logs, and fixtures had been removed and all that remained were studs where the equipment was located. The basin had been covered with a plywood, sheet metal, and metal grating cover supported by channel iron. This cover made it impossible to check the basin overflow drain system to see if they had been plugged.

The main air lock from the reactor containment vessel opened into the storage basin area, which is the point of connection of the service building and reactor containment vessel. An underwater fuel transfer opening between the containment vessel and the storage basin permitted irradiated fuel elements to be moved to the basin for storage or “green fuel” to the reactor for recharging. A fuel element loadout facility adjoins the storage basin area on the east side. It is from this facility that elements were loaded in shielding casks and shipped to the 327 Building or the 200 Area by truck.

The 309 facility was covered by a CERCLA removal action and did not represent a separate waste site under the TPA-MP-14 process. TPA-MP-14, Rev. 2, dated September 1, 2011, states that buildings/facilities that do not contain a TSD unit shall not be documented in WIDS. This facility contained no TSD units and does not meet TPA-MP-14 criteria. Therefore, the 300-39 waste site has been reclassified to “Rejected.”

#### **4.40 300-40, CORROSION OF VITRIFIED CLAY PROCESS SEWER PIPE**

##### **4.40.1 History**

During removal of the 311 Tank Farm Methanol Stillhouse in 1980, it was discovered that the vitrified clay pipeline of the 300 Area process sewer in that area was severely corroded. This section of pipe collected rain water drainage from the 311 Tank Farm and the 303F Building floor drains and effluent from the Methanol Stillhouse. The southern section of the 300-40 waste site consisted of the area around the footprint of the demolished 303F Building and

311 Tank Farm. The northern section of the 300-40 waste site was the footprint of the demolished 3712 Building.

#### **4.40.2 Excavation Operations**

Remediation of the combined 300-40, UPR-300-39, UPR-300-40, and UPR-300-45 waste sites was performed from May 24, 2010, through July 20, 2010. The soil within the waste site footprints was excavated to a depth of 1 m (3.3 ft) bgs, and the resulting 911 BCM (1,192 BCY) of soil was disposed at ERDF.

#### **4.40.3 Verification Sampling**

Verification sampling for the 300-40, UPR-300-39, UPR-300-40, and UPR-300-45 waste sites was conducted December 15 and 16, 2011. Two decision units were identified for verification sampling in the overall excavation footprint. The 300-40 waste site excavation footprint is one decision unit and the combined UPR-300-39, UPR-300-40, and UPR-300-45 waste site footprints was the second decision unit. Twelve statistical soil samples were collected from each decision unit.

#### **4.40.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed at ERDF. The remaining soil at the 300-40 waste site excavated areas has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the residential land use scenario and poses no threat to groundwater or the Columbia River. The 300-40 waste site was reclassified to a status of “Final Closed Out.”

### **4.41 300-41, 306E NEUTRALIZATION TANK, UNDERGROUND LIME TANK AND VALVE PIT**

#### **4.41.1 History**

The 300-33, 300-256, and 300-41 waste sites consisted of the contaminated soil around and under the 306W and 306E Building, the neutralization tank, and valve pit. The 306E/W Building (306W and 306E) was located on the northern side of Ginko Street between Wisconsin and California Streets in the northeastern corner of the 300 Area. The 300-41 neutralization tank was located at the northeast corner of the 306E Building.

#### **4.41.2 Excavation Operations**

Demolition of the 306E, 306W, and 306E-BA facilities, which overlaid 300-33, 300-256, and 300-41 waste sites, was completed between November 2006 and December 2007. Remediation of the combined 300-33, 300-256, and 300-41 waste sites occurred between July 10 and November 9, 2009. The remediation activities included the removal of the neutralization tank,



valve pit, soil, and other debris within the footprint of the 306E/W Building including the partial removal and backfill of the 306E Building assembly pit. All debris and excavation materials have been removed to ERDF.

#### **4.41.3 Verification Sampling**

Verification sampling for the 300-33, 300-256, and 300-41 waste sites was performed on May 6, 2010. The excavation footprint is the only decision unit identified for the combined 300-33, 300-256, and 300-41 waste sites. Twelve statistical soil samples were collected on the grid within the remediation footprint at the site.

#### **4.41.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed at ERDF. The remaining soil at the 300-41 waste site excavated areas has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the residential land use scenario and poses no threat to groundwater or the Columbia River. The 300-41 waste site was reclassified to a status of “Final Closed Out.”

### **4.42 300-42, 306E FABRICATION AND TESTING LABORATORY**

The 300-42 site consisted of the 306E Building. The area around the 306E Building was paved and posted as having underground radioactive contamination. The demolition and load-out of the above-grade portion of the 306E Building was completed in January 2007. The 306E, 306W, and 306E-BA slabs were removed as part of the remedial action for waste sites 300-33, 300-256, and 300-41 between July 10 and November 9, 2009. The site was excavated to a depth of 1.5 m (4.9 ft) below grade. Therefore, the 300-42 waste site resulted in a classification of “Not Accepted.”

### **4.43 300-43, UNPLANNED RELEASE OUTSIDE THE 304 BUILDING**

#### **4.43.1 History**

The 300-43, Unplanned Release Outside the 304 Building waste site consisted of uranium-contaminated soil around the 304 Building (formerly the 304 Concretion Facility) in the 300 Area. The site included residual contamination remaining in the 304 Storage Area (304 SA).

#### **4.43.2 Excavation Operations**

The demolition of the 303A, 304, 304A, 303B, 3732, 303C, 3707D, and 303E Building foundations began on June 1, 2010, and was completed by June 24, 2010. The 300-28, 300-43, 300-48, 300-249, and 300-16:3 excavation of building foundations, associated pipelines, and soils began on June 28 and was completed by July 29, 2010. Due to elevated radiologically

contaminated soil found north of the 303E Building, additional remediation was performed on September 30, 2010, targeting specific locations with elevated readings. The excavation of the 300-28, 300-43, 300-48, 300-249, and 300-16:3 waste sites resulted in a total of approximately 2,914 BCM (3,811 BCY) of contaminated soil and debris. All material was direct loaded for disposal at ERDF.

#### **4.43.3 Verification Sampling**

The 300-28, 300-43, 300-48, 300-249, and 300-16:3 waste sites consisted of an excavation footprint area for verification sampling. Statistical sampling design was applied to the excavation footprint. Twelve statistical soil samples were collected on the grid within the excavation footprint. Focused sample data was used as a component of site closeout. The excavation surveyed on March 9, 2011, confirmed that waste site excavation was complete. The screening discovered low levels of radiation north and south of the former location of the 303E Building. Elevated readings (above background levels) were detected, and focused samples were taken from the five locations with elevated readings. The five locations represent the areas within the waste site excavation that have remaining beta contamination greater than 413 cpm and gamma contamination greater than 1,230 cpm in the final GPERS data.

#### **4.43.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed at ERDF. The remaining soil at the 300-43 waste site excavated areas has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land use scenario and poses no threat to groundwater or the Columbia River. The 300-43 waste site was reclassified to a status of “Final Closed Out.”

### **4.44 300-45, SURFACE CONTAMINATION AREA, LOCATION 3: BIRD DROPPINGS AREA (SOUTHWEST CORNER OF THE 316-5 PROCESS TRENCHES FENCE LINE) SCA #1**

#### **4.44.1 History**

The 300-45 waste site consisted of heavy vegetated area with contaminated soil caused by the spread of radioactive rabbit feces. A 1992 radiation survey of the perimeter of the 316-5 Process Trenches detected 500 to 1,000 dpm direct beta above background in the area posted as a Soil Contamination Area adjacent to the southwest corner of 316-5. A composite sample of rabbit droppings and soil collected in 1995 near the 316-5 Process Trenches fenceline showed elevated levels of uranium-238 and gross alpha.

#### **4.44.2 Excavation Operations and Verification Sampling**

The 300-45 waste site was remediated under the *Record of Decision for the 300-FF-1 and 300-FF-5 Operable Units, Hanford Site, Benton County Washington* (EPA 1996) because of its

close proximity to the 300 Area Process Trenches (316-5) and its small size. Contaminated soil was removed from the site and disposed at ERDF. Verification sampling analysis indicated that remaining soil within the area is below the cleanup standards.

#### **4.44.3 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed at ERDF. It was determined that the waste site no longer posed an unacceptable threat to human health or the environment; therefore, the waste site has been reclassified to “Final Closed Out.”

### **4.45 300-46, SOIL CONTAMINATION AND MULTIPLE FRENCH DRAINS SURROUNDING 3706 BUILDING**

#### **4.45.1 History**

The 300-46 waste site structures are all collocated within the 300 Area on the southeast corner of Apple Street and Alaska Street. The waste site consisted of the remaining 3706 Building foundation and subgrade contaminated soils and structures including french drains. There were 19 documented miscellaneous stream/steam condensate french drains associated with this waste site that were evaluated in conjunction with the 300-46 waste site remediation.

#### **4.45.2 Excavation Operations**

The demolition of the 3706 Building aboveground structures was completed in June 2007. The 300-46 excavation of building foundations, associated pipelines, and soils began on January 17, 2011, and was completed by April 19, 2012, to a depth of 1.5 m (5 ft). The excavation of the 300-46 waste site resulted in a total of approximately 6,445 BCM (8,430 BCY) of contaminated soil and debris. Based on historical drawings, approximately 300 m (990 ft) of process sewer pipelines located within the 300-46 slab areas was also removed during excavation. All material was direct loaded for disposal at ERDF. Remediation of the 300-46 waste site excavation included removal of the 3706 Building concrete slab. All the foundation debris such as concrete, metal rebar, and miscellaneous piping (e.g., steam, water) was excavated and disposed at ERDF. No anomalous materials or stained soil were observed during remedial activities.

Of the 21 french drains associated with the 300-46 waste site, 18 were excavated and removed from within the excavation boundaries. Two french drains were reclassified as rejected and not excavated, and one was in close proximity to an active well and, therefore, unable to be excavated. All of the excavated french drains were considered consolidated waste sites. After further review of the 18 suspected french drains, it was determined that only 10 could be considered as UIC structures. The remaining structures were closed-bottom quench tanks or catch basins that discharged to sanitary sewer systems.

**4.45.3 Verification Sampling**

Verification sampling for the 300-46 waste site was conducted October 18 through 24, 2012, and on January 3 and 23, 2013. The 300-46 waste site consists of the excavation footprint area for verification sampling. A statistical sampling design was applied to the excavation footprint. Twelve statistical soil samples were collected on the grid within the excavation footprint. Eighteen focused sample locations were identified within the excavation footprint based on the location of the consolidated french drains associated with the 300-46 waste site.

The GPERS surveys were performed on April 30, 2012, within the 300-46 waste site following the site remedial action. Neither beta nor gamma surveys showed any readings above background within the excavation.

**4.45.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed at ERDF. The remaining soil at the 300-46 waste site excavated areas has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land use scenario and poses no threat to groundwater or the Columbia River. The 300-46 waste site was reclassified to a status of “Final Closed Out.”

**4.46 300-47, RESIDUAL HAZARDOUS SUBSTANCES NORTHWEST OF 3708 BUILDING**

The 300-47 waste site was identified as two locations of potential contamination near the 3708 Building that resulted from tank leakage. The tanks were chemical holding tanks containing waste from floor, shower, and sink drains in the 3708 Building. The area around the 3708 Building was not posted for contamination and there was no evidence of underground tanks. The area was partially paved with asphalt and otherwise surfaced in crushed gravel. There were no markers where the chemical tank and the oil tank were located.

The *Past Practices Technical Characterization Study – 300 Area – Hanford Site* (WHC-MR-0388) report identified two sites of concern related to the 3708 Building. The first location of concern was an underground chemical storage tank located at the northwest corner of the building. According to the report, the tank was removed in 1989. The second location of concern was where an underground oil storage tank had been located. According to the report, the tank was removed “when the building was excavated.” Based on these findings, the 300-47 waste site was classified as “Not Accepted.”

**4.47 300-48, THORIUM OXIDE AND FUEL FABRICATION CHEMICAL WASTES AROUND 3732 BUILDING****4.47.1 History**

The 300-48, Thorium Oxide and Fuel Fabrication Chemical Wastes Around 3732 Building waste site consisted of the 3732 Building foundation and the surrounding soil contamination. The 3732 Building was a one-story, metal-frame structure seated on a concrete foundation with a concrete floor and a corrugated metal roof. The 3732 Building was demolished in September 1997. The building foundation was left in place, and several areas of fixed radiological contamination were identified and painted over. The foundation was then covered with approximately 0.5 m (1.6 ft) of soil, topped by a layer of gravel. The 300-48 waste site appeared as a gravel-covered mound. There were no hazard postings except for two signs related to the adjacent 303B Building.

**4.47.2 Excavation Operations**

The demolition of the 303A, 304, 304A, 303B, 3732, 303C, 3707D, and 303E Building foundations began on June 1, 2010, and was completed by June 24, 2010. The 300-28, 300-43, 300-48, 300-249, and 300-16:3 excavation of building foundations, associated pipelines, and soils began on June 28 and was completed by July 29, 2010. Due to elevated radiologically contaminated soil found north of 303E Building, additional remediation was performed on September 30, 2010, targeting specific locations with elevated readings. The excavation of the 300-28, 300-43, 300-48, 300-249, and 300-16:3 waste sites resulted in a total of approximately 2,914 BCM (3,811 BCY) of contaminated soil and debris. All material was direct loaded for disposal at ERDF.

**4.47.3 Verification Sampling**

The 300-28, 300-43, 300-48, 300-249, and 300-16:3 waste sites consisted of an excavation footprint area for verification sampling. Statistical sampling design was applied to the excavation footprint. Twelve statistical soil samples were collected on the grid within the excavation footprint. Focused sample data was used as a component of site closeout. The excavation surveyed on March 9, 2011, confirmed that waste site excavation was complete. The screening discovered low levels of radiation north and south of the former location of the 303E Building. Elevated readings (above background levels) were detected, and focused samples were taken from the five locations with elevated readings. The five locations represent the areas within the waste site excavation that have remaining beta contamination greater than 413 cpm and gamma contamination greater than 1,230 cpm in the final GPERS data.

**4.47.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed at ERDF. The remaining soil at the 300-48 waste site excavated areas has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented

(or bounded) by the industrial land use scenario and poses no threat to groundwater or the Columbia River. The 300-48 waste site was reclassified to a status of “Final Closed Out.”

#### **4.48 300-53, UNPLANNED RELEASE EAST SIDE OF 303-G**

The 300-53 waste site was a contaminated area detected outside the 303-G Building, on the surface of some slightly eroded soil located within the posted Underground Radioactive Material area. The actual erosion was at the end of a concrete splash guard underneath the water discharge pipe. Disruption of the ground surface by the fire suppression system testing exposed sub-surface contamination that was previously covered with clean soil. On October 16, 1996, exposed contaminated soil was cleaned up and covered with clean soil. The 300-53 waste site has been reclassified to “Final Closed Out.”

#### **4.49 300-55, 309 RUPTURE LOOP HOLDING TANK, RUPTURE LOOP HOLD-UP TANK, RLT-2, 307-D**

The 300-55 waste site consisted of an UST. Liquid waste routed to this tank was sampled. If it was contaminated it was sent to the 340 Complex through a 7.6-cm (3-in.) underground pipeline. If the liquid was not contaminated, it was diverted to the Columbia River via a 1 m (3 ft) diameter outfall line. Although the exact date cannot be determined, the tank was removed sometime in the 1970s and disposed of in the 200 Area burial grounds. All RLWS connections were cut and plugged. The abandoned river outfall line was cut in the vicinity of the 3906 pump station. The line to the river was left in place. Based on this information, the 300-55 waste site has been reclassified to “Rejected.”

#### **4.50 300-56, 306-E 90-DAY WASTE ACCUMULATION AREA**

The 300-56 site was previously used as a 90-day waste storage area for the 306E Building. The site was then used as a hazardous material storage area. According to the TPA-MP-14, the 90-day storage areas no longer require tracking in WIDS. The materials staged at this site were contained within a steel storage cabinet. No information was available related to potential spills at the site. The 300-56 site has been reclassified to “Rejected.”

#### **4.51 300-57, 335 BUILDING 90-DAY WASTE ACCUMULATION AREA**

The 300-57 site was a small cinder block room addition on the west side of the 335 Building. The exterior door was locked and labeled “90 Day Storage Accumulation” and “Danger.” The site was an inactive 90-Day Storage Accumulation Area that was used to store sodium-contaminated piping and components after dismantling, prior to shipment for disposal. During the 3+ years that the area was utilized at the 335 Building, there were no reported spills or evidence of any spills associated with operations of this facility. The 300-57 waste site was

reclassified to “Closed-Out” in 1998. However, based on TPA-MP-14, the 90-day storage areas no longer require tracking in WIDS; therefore, the 300-57 waste site has been reclassified to “Rejected.”

#### **4.52 300-58, 305B STEAM CONDENSATE INJECTION WELL, MISCELLANEOUS STREAM #449**

The 300-58 site was a french drain identified as miscellaneous stream #449. This site received steam condensate only produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The unit was a concrete pipe that is flush with the ground surface, and filled with cobbles and sand. The 300-58 site has been reclassified to “Rejected.”

#### **4.53 300-59, 305 BUILDING STEAM CONDENSATE, MISCELLANEOUS STREAM #417**

The 300-59 site was an injection well covered by a metal lid. When the site was active, the flow rate was less than 0.038 L/min (0.01 gal/min). This site received steam condensate only produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-59 site has been reclassified to “Rejected.”

#### **4.54 300-60, 303A BUILDING STEAM CONDENSATE, MISCELLANEOUS STREAM #339, F.D. #26**

The 300-60 site was an injection well that received steam condensate. The site was active until 2012 when it was decommissioned. The 300-60 site was just south of the “Radiologically Controlled Area” sign around the 303A, 304, and 303 B Buildings. There were no known hazardous or radioactive releases from this steam condensate discharge. This site received steam condensate only produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes this was a seasonal discharge. The 300-60 site has been reclassified to “Rejected.”

**4.55 300-61, 303B BUILDING STEAM CONDENSATE, MISCELLANEOUS  
STREAM #444, INJECTION WELL #12**

The 300-61 waste site was described as an inactive, abandoned injection well. No engineered structure was evident at the location described for this site. Two steam lines were found that descended from the overhead line and disappeared into the ground. When the site was active, the flow rate was less than 0.038 L/min (0.01 gal/min). This site received steam condensate only produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-61 site has been reclassified to "Rejected."

**4.56 300-62, 303C BUILDING – STEAM CONDENSATE, MISCELLANEOUS  
STREAM #495**

The 300-62 site consisted of two 2.54-cm (1-in.) metal pipes from steam drain lined that entered the ground at the base of the steam support structure. The engineered drain structure was not visible. The site received steam condensate only produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-62 site has been reclassified to "Rejected."

**4.57 300-63, 305B BUILDING STORMWATER RUNOFF, MISCELLANEOUS  
STREAM #458**

The 300-63 site was a concrete french drain, 0.5 m (1.5 ft) deep, with a perforated steel plate cover, which was flush with the alley road, located north of 314 Building. Based on the construction drawings, the open bottom french drain location was connected directly to the 300-15 process sewer pipeline. It was determined that the site had received stormwater runoff only, resulting in a classification of "Not Accepted."

**4.58 300-64, 303F BUILDING STEAM CONDENSATE, MISCELLANEOUS  
STREAM #352**

The 300-64 site was a heating, ventilation, and air conditioning (HVAC) steam condensate return to the WATS pipe trench (300-224 waste site). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes this was a



seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-64 site has been reclassified to “Rejected.”

#### **4.59 300-65, 303J BUILDING – STEAM CONDENSATE MUD LEG (PART OF 300 MAIN SUPPLY), MISCELLANEOUS STREAM #266**

The 300-65 site was a 0.35-m. (14-in.)-diameter steel pipe in the ground, about 0.8 m (2.5 ft) deep. Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-65 site has been reclassified to “Rejected.”

#### **4.60 300-66, 303J BUILDING HVAC CONDENSATE, MISCELLANEOUS STREAM #267**

The 300-66 site was an open concrete french drain. The HVAC system generated condensate on the coils from the air. The condensate was collected by the HVAC unit and it was drained to the 300-66 french drain. The site received less than 0.038 L/min (0.01 gal/min) HVAC condensate only, therefore; the 300-66 waste site has been reclassified to “Rejected.”

#### **4.61 300-67, STEAM CONDENSATE FROM 300 AREA MAIN STEAM HEADER, MISCELLANEOUS STREAM #414**

The 300-67 site was an injection well that received steam condensate. The site was located northeast of the 304 Building. When the site was active, the flow rate was less than 0.038 L/min (0.01 gal/min). This site received steam condensate only produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-67 site has been reclassified to “Rejected.”

#### **4.62 300-68, 305 BUILDING – STEAM CONDENSATE, MISCELLANEOUS STREAM #451, PIT U23**

The 300-68 site was a corrugated metal injection well. The site was located on the south side of the 305 Building. When the site was active, the flow rate was less than 0.038 L/min (0.01 gal/min). This site received steam condensate only produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced

into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-68 site has been reclassified to “Rejected.”

#### **4.63 300-69, 305 BUILDING STEAM CONDENSATE, MISCELLANEOUS STREAM #415**

The 300-69 site was an injection well located on the south side of the 305 Building. When the site was active, the flow rate was less than 0.038 L/min (0.01 gal/min). This site received steam condensate only produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-69 site has been reclassified to “Rejected.”

#### **4.64 300-70, 305 BUILDING STEAM CONDENSATE, MISCELLANEOUS STREAM #416**

The 300-70 site was an injection well. This site received steam condensate only from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-70 site has been reclassified to “Rejected” in 1998. The top 1 m (3 ft) of the structure has been removed and backfilled.

#### **4.65 300-71, 306E BUILDING – HVAC CONDENSATE, MISCELLANEOUS STREAM #454**

The 300-71 site was an injection well that received HVAC condensate. The HVAC system generated condensate on the coils from the air. The condensate was collected by the HVAC unit and drained to the french drain. When the site was active, it received less than 0.038 L/min (0.01 gal/min) or HVAC condensate only. The 300-71 site has been reclassified to “Rejected.”

**4.66 300-72, 308 BUILDING STORMWATER RUNOFF, MISCELLANEOUS STREAM #404**

The 300-72 site was an injection well located at the northeast corner of the 308 Building. The injection well received stormwater runoff near the 308 Building. The 300-72 site has a “Not Accepted” classification.

**4.67 300-73, 308 BUILDING STORMWATER RUNOFF, MISCELLANEOUS STREAM #405**

The 300-73 site was an injection well located at the northeast corner of the 308 Building. The injection well received stormwater runoff from the surrounding area. The 300-73 site has a “Not Accepted” classification.

**4.68 300-74, 308 BUILDING STORMWATER RUNOFF, MISCELLANEOUS STREAM #406**

The 300-74 site was an injection well located at the northeast corner of the 308 Building. The injection well received stormwater runoff. When the site was active, the flow rate was less than 0.038 L/min (0.01 gal/min) or stormwater only. The 300-74 site has a “Not Accepted” classification.

**4.69 300-75, 309 BUILDING STORMWATER RUNOFF AND CHILLER WATER, MISCELLANEOUS STREAM #445, INJECTION WELL #20**

The 300-75 site was an injection well that received stormwater runoff and water from a chiller. When the site was active, the flow rate was less than 0.038 L/min (0.01 gal/min) or stormwater only. The chiller generated condensate on the coils from the air. The condensate was collected by the chiller unit and was drained to the injection well. There were no known hazardous or radioactive releases from this condensate discharge; therefore, the 300-75 site has been reclassified to “Rejected.”

**4.70 300-76, 306W BUILDING STEAM CONDENSATE, MISCELLANEOUS STREAM #418**

The 300-76 site was a french drain that consisted of a concrete pipe flush with the ground surface and received steam condensate only. Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes this was a seasonal discharge.

Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-76 site has been reclassified to “Rejected.”

#### **4.71 300-77, 309 BUILDING STORMWATER RUNOFF, MISCELLANEOUS STREAM #450**

The 300-77 site was a storm drain that emptied into the 300-15 process sewer. When it was active, the flow rate was less than 0.038 L/min (0.01 gal/min) of stormwater only. The 300-77 site has a “Not Accepted” classification.

#### **4.72 300-78, 300 AREA MAIN HEADER STEAM TRAP (SOUTHWEST CORNER OF 313 BUILDING), MISCELLANEOUS STREAM #331**

The 300-78 site was a rectangular-shaped below grade concrete box that was covered with two steel plates. Seven pipes of various sizes entered the site from the 313 Building. A concrete trench extended from the site to the south. A concrete pad surrounding the site was painted gray and posted as fixed radiological contamination. When the site was active, the flow rate was less than 0.038 L/min (0.01 gal/min) of steam condensate only. There were no hazardous or radioactive releases from this steam condensate discharge. The 300-78 site has been reclassified to “Rejected.”

#### **4.73 300-79, 313 BUILDING STORMWATER RUNOFF, MISCELLANEOUS STREAM #457**

The 300-79 site consisted of a horizontal drywell 33.5 m (110 ft) long that received stormwater from six catch basins located to the south and the surrounding 313 Building. The flow rate was less than 0.038 L/min (0.01 gal/min) of stormwater runoff only. The 300-79 site has a “Not Accepted” classification.

#### **4.74 300-80, 314 BUILDING STORMWATER RUNOFF AND STEAM CONDENSATE, MISCELLANEOUS STREAM #268**

##### **4.74.1 History**

The 300-80 waste site was a square structure adjacent to the exterior stairwell leading to the basement of the 314 Building on the west side of the building. The structure was above grade and there were no pipes feeding into it from the roof of the 314 Building. The site received steam condensate, which in 1995 was rerouted to the process sewer. The site was located within the boundary of the 300-24 waste site.

**4.74.2 Excavation Operations**

Remedial action activities at the 300-16:2, 300-24, 300-80, and 300-218 waste sites were carried out from December 21, 2009, to May 20, 2010. The excavation reached a maximum depth of 3 m (9.8 ft) near the center and southwest corner of the collective waste sites.

Approximately 6,275 m<sup>3</sup> (14,995 tons) of materials were removed from the waste sites' excavation and direct loaded for disposal at ERDF. There was no waste staging pile area footprint or overburden soil stockpile associated with these waste sites. The structures associated with the 300-80 drain were removed. The concrete slabs associated with the 314, 314A, and 314B Buildings have also been removed.

**4.74.3 Verification Sampling**

Verification sampling for the 300-16:2, 300-24, 300-80, and 300-218 waste sites were performed on March 30, 2011. The excavation area footprint was the only decision unit identified for the 300-16:2, 300-24, 300-80, and 300-218 waste sites for verification sampling. Twelve statistical soil sample locations were identified.

**4.74.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed at ERDF. The remaining soil at the 300-80 waste site excavated areas has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land use scenario and poses no threat to groundwater or the Columbia River. The 300-80 waste site has been reclassified to "Final Closed Out."

**4.75 300-81, 321 BUILDING STEAM CONDENSATE MISCELLANEOUS  
STREAM #370**

The 300-81 site was a concrete structure with a metal cover. When the site was active, the flow rate was less than 0.038 L/min (0.01 gal/min). This site received steam condensate only produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. There were no known hazardous or radioactive releases from this steam condensate discharge. The 300-81 site was "Consolidated" with the UPR-300-4 waste site.

**4.76 300-82, 321 BUILDING STEAM CONDENSATE, MISCELLANEOUS  
STREAM #371**

The 300-82 site consisted of the french drain with a metal cover. The source was eliminated in July 1996. When the site was active, the flow rate was less than 0.038 L/min (0.01 gal/min). This site received steam condensate only produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. There were no known hazardous or radioactive releases from this steam condensate discharge. The 300-82 site was “Consolidated” with the UPR-300-4 waste site.

**4.77 300-83, 321 BUILDING STEAM CONDENSATE, MISCELLANEOUS  
STREAM#372**

The 300-83 site was a concrete structure with a metal cover. The source was eliminated in July 1996. When the site was active, the flow rate was less than 0.038 L/min (0.01 gal/min). This site received steam condensate only produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. There were no known hazardous or radioactive releases from this steam condensate discharge. The 300-83 site was “Consolidated” with the UPR-300-4 waste site.

**4.78 300-84, 321 BUILDING VENT VALVE ON WATER LINE, MISCELLANEOUS  
STREAM #348**

The 300-84 site was a semicircular, steel caisson. When the site was active, the flow rate was less than 0.038 L/min (0.01 gal/min). This site received steam condensate only produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. There were no known hazardous or radioactive releases from this steam condensate discharge. The 300-84 was “Consolidated” with the UPR-300-4 waste site.

**4.79 300-85, 323 BUILDING STEAM VALVE PIT, MISCELLANEOUS  
STREAM #453**

The 300-85 site was a vertical steel caisson with a sloping steel lid. The interior of the caisson contained several pipes and valves. Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge and received less than 0.038 L/min (0.01 gal/min) steam overflow from the package boilers. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The site was reclassified to “Rejected.”

**4.80 300-86, 300 AREA SOUTH PARKING LOT STORMWATER RUNOFF,  
MISCELLANEOUS STREAM #524**

The 300-86 site included an active basin approximately 2 m (6.6 ft) deep that collects stormwater from the main 300 Area south parking lot and discharges it to ground. A lawn had been planted within the basin, and two inlet pipes were visible at the northeast and southeast corners of the site. The grass serves to filter and biodegrade potential pollutants prior to infiltration to the soil. The flow was estimated to be less than 18.75 L/min (5 gal/min). Stormwater disposal to engineered structures are managed under a permit issued by Ecology, therefore, the 300-86 waste site has been reclassified to “Rejected.”

**4.81 300-87, 309 BUILDING STORMWATER RUNOFF, MISCELLANEOUS  
STREAM #679**

The 300-87 site consisted of a storm drain that emptied into the radioactive process sewer 300 RLWS. When the site was active, the flow rate was less than 0.038 L/min (0.01 gal/min) of stormwater only. The 300-87 site has a “Not Accepted” classification.

**4.82 300-88, 320 BUILDING IRRIGATION LINE EFFLUENT, MISCELLANEOUS  
STREAM #626**

The 300-88 site was a french drain that was constructed of concrete and covered with a steel lid. The site received water from the evaluation of irrigation lines when the lines were drained in the fall. The site received irrigation line drainage only; therefore, the 300-88 waste site has been reclassified to “Rejected.”

**4.83 300-89, 320 BUILDING IRRIGATION LINE EFFLUENT, MISCELLANEOUS STREAM #627**

The 300-89 site was a french drain constructed of concrete and covered with a steel lid. The site received waste from the evacuation of irrigation lines around the 320 Building when the lines were drained in the fall. The site received irrigation line drainage only; therefore, it has been reclassified to “Rejected.”

**4.84 300-90, 320 BUILDING IRRIGATION LINE EFFLUENT, MISCELLANEOUS STREAM #628**

The 300-90 site was a french drain constructed of concrete and covered with steel lid. The site received water from irrigation lines when lines were drained in the fall. The site received irrigation line discharge only and no other waste disposal occurred at this site, therefore, the site has been reclassified to “Rejected.”

**4.85 300-91, 320 BUILDING, MISCELLANEOUS STREAM #350**

The 300-91 site was a french drain constructed of concrete and covered with steel lid. The site received water from irrigation lines when lines were drained in the fall. The site received irrigation line discharge only and no other waste disposal occurred at this site, therefore, the site has been reclassified to “Rejected.”

**4.86 300-92, 321 BUILDING STORMWATER RUNOFF, MISCELLANEOUS STREAM #680**

The 300-92 site was a small steel grate drain. The site was designed to receive stormwater runoff from the 321 Building. The drain was located on the south side of the 321 Building, at the bottom of a sloping truck ramp, in front of a roll-up door. The site was reclassified to “Rejected” in 1999, and then “Consolidated” into the UPR-300-4 waste site.

**4.87 300-93, 324 BUILDING STORMWATER RUNOFF, MISCELLANEOUS STREAM #354**

The 300-93 site consisted of the 324 Building stormwater drainage system, located 9 m (30 ft) south of the 324 Building. The discharge from the stormwater catch basin was rerouted to the 300 Area Process Sewer, eliminating the source of the miscellaneous stream. Prior to March 1995, while functioning as an injection well, the unit received only uncontaminated stormwater. The site is classified “Not Accepted.”



**4.88 300-94, 324 BUILDING STORMWATER RUNOFF, MISCELLANEOUS STREAM #711, 300-234**

The 300-94 site consisted of a drywell, three catch basins, a trench, and numerous downspouts located on the northeast side of the 324 Building. They were installed to eliminate flooding on the east side of the 324 Building. The drywell is located approximately 9 m (30 ft) southeast of the northeastern corner of the 324 Building. The site received stormwater runoff near the 324 Building. The site is classified “Not Accepted.”

**4.89 300-95, 324/336 BUILDINGS STORMWATER RUNOFF AND STEAM CONDENSATE; MISCELLANEOUS STREAM #425**

The 300-95 site was a french drain that received stormwater and steam condensate. Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The site has been reclassified to “Rejected.”

**4.90 300-96, 325 BUILDING STEAM CONDENSATE, MISCELLANEOUS STREAM #707**

The 300-96 site was a french drain constructed of concrete and covered with a steel lid. The site is located west of the 325 Building. Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The site has been reclassified to “Rejected.”

**4.91 300-97, 325 BUILDING STORMWATER RUNOFF AND FIRE SYSTEM TESTING WATER, MISCELLANEOUS STREAM #706**

The 300-97 site was a drain covered by a rusted perforated steel plate. The site drains a small asphalt pad and a pipe coming out of the bottom of the fire system shed. The site is located on the southeast side of the 325 Building, 3.96 m (13 ft) from the building, and adjacent to the fire system shed that is attached to the 325 Building. The site is classified as “Not Accepted.”

**4.92 300-98, 325 BUILDING SOUTH STAIRWELL DRAIN, MISCELLANEOUS STREAM #264, 300-229**

The 300-98 site was a square floor drain at the bottom of a stairwell that drained stormwater from a leaky roof. The drain received less than 0.038 L/min (0.01 gal/min) of stormwater runoff from the 325 Building roof. The site is classified as “Not Accepted.”

**4.93 300-99, 325 BUILDING NITROGEN TANK BLOWDOWN MISCELLANEOUS STREAM #265, INJECTION WELL #399-3**

The 300-99 site received blowdown from liquid nitrogen tank. The site is located on the northeast corner of the 325 Building, under an elevated gas storage dock. The site is no longer active and no other streams were disposed of through this structure. The waste site has been reclassified to “Rejected.”

**4.94 300-100, 325 BUILDING STORMWATER RUNOFF, MISCELLANEOUS STREAM #408**

The 300-100 site was a drain that received stormwater from a chiller pad at the 325 Building. The site is located on the northeast side of the 325 Building chiller pad. The site was reclassified to “Not Accepted.”

**4.95 300-101, 326 BUILDING STORMWATER RUNOFF AND STEAM CONDENSATE, MISCELLANEOUS STREAM #409**

The 300-101 site was a roadway drain with a rectangular perforated steel cover. The site drained stormwater from a loading dock and a large area of asphalt parking space. The steam condensate component for this site has been routed to the sanitary sewer. Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The site has been reclassified to “Rejected.”

**4.96 300-102, 328 BUILDING STEAM CONDENSATE, MISCELLANEOUS STREAM #353**

The 300-102 site was an injection well that received steam condensate. The site was associated with the 328 Building. When the site was active, the flow rate was less than 0.038 L/min (0.01 gal/min) of steam condensate. Steam was produced from sanitary water that had been sent

through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The site has been reclassified to “Rejected.”

**4.97 300-103, 329 BUILDING STORMWATER RUNOFF, MISCELLANEOUS STREAM #422**

The 300-103 site is a catch basin covered with a steel grating that drains stormwater from the surrounding area. The site is located near the southeast corner of the 329 Building just off the loading dock. The catch basin is part of the stormwater run-off drainage system that was originally connected to the sanitary sewer system (300 SSS). This segment of the sanitary sewer system was modified (cut and capped) and abandoned in place. The catch basin was rerouted to connect with the process sewer system (300-214 site). It was rerouted again in 2009 to a stormwater runoff infiltration basin (300-86 site); therefore, the site type was changed to a diversion box. The site has been classified as “Not Accepted.”

**4.98 300-104, 329 BUILDING STORMWATER RUNOFF, MISCELLANEOUS STREAM #546**

The 300-104 site is a catch basin covered with a steel grating that drains stormwater from the surrounding area. The site is located on the east site of the 329 Building just off the loading dock. The catch basin is part of the stormwater run-off drainage system that was originally connected to the sanitary sewer system (300 SSS). This segment of the sanitary sewer system was modified (cut and capped) and abandoned in place. The catch basin was rerouted to connect with the process sewer system (300-214 site). It was rerouted again in 2009 to a stormwater runoff infiltration basin (300-86 site); therefore, the site type changed to diversion box. The site has been classified as “Not Accepted.”

**4.99 300-105, 331 BUILDING STEAM CONDENSATE, MISCELLANEOUS STREAM #513, PIT U1**

The 300-105 site is a steam pit, located 9.1 m (30 ft) off the northwest corner of the 331 Building. The site received steam condensate produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The site has been reclassified to “Rejected.”

**4.100 300-106, 331 BUILDING STEAM CONDENSATE, MISCELLANEOUS  
STREAM #574**

The 300-106 site was a drain line that drained stormwater and possibly steam condensate from what appeared to be a steam pipe near the drain. The site is located adjacent to the west side of the 331 Building at the low point of the walkway around the building. The site has been reclassified to “Rejected.”

**4.101 300-107, 331 BUILDING STORMWATER RUNOFF, MISCELLANEOUS  
STREAM #447, INJECTION WELL #32**

The 300-107 site is a french drain constructed of concrete and covered with a steel lid. Two drain lines enter the drain at the bottom. The site is located on the west side of the 331 Building near the kennels and, presumably, drains stormwater from drains located near two nearby entrances to the 331 Building. The site has a “Not Accepted” classification status.

**4.102 300-108, 331 BUILDING STORMWATER RUNOFF, MISCELLANEOUS  
STREAM #448, INJECTION WELL #37**

The 300-108 site is a french drain located on the west side of the 331 Building. The french drain received stormwater runoff from the surrounding paved area and roof drains from the active 331 Building. There is no known contamination within the drainage area. The 300-108 site has a “Not Accepted” classification status.

**4.103 300-109, 333 BUILDING STORMWATER RUNOFF, MISCELLANEOUS  
STREAM #455****4.103.1 History**

The 300-109 waste site was a french drain located approximately 18 m (60 ft) north of the 333 Building that connected to a drainage network for collection of stormwater runoff from roofs and pavements, draining a network of four catch basins. In 1992, radioactively contaminated soil was discovered while excavating a pipe trench north of the 333 Building. The contamination appeared to be confined to a narrow band of soil approximately 2.5 to 5 cm (1 to 2 in.) thick. Approximately one dump truck load of contaminated soil was removed at the time of discovery. Three soil samples were collected and analytical results indicated the contamination was uranyl nitrate and that the soil did not contain significant quantities of hazardous chemicals. The soil removed from the release site was disposed of as low-level radioactive waste. All surface area disturbed in the vicinity of the contaminated soil zone was regraded to a level about 10 cm (4 in.) below grade.

**4.103.2 Excavation Operations**

Remediation of the 300-109 waste site was performed from April 28 through April 29, 2009. The soil and asphalt within the waste site footprint were excavated to an average depth of 2.6 m (8.5 ft) bgs, with a maximum depth of 3.7 m (12 ft) bgs at the location of the drain. The resulting 325 BCM (425 BCY) of soil was disposed at ERDF. Materials identified for disposal to ERDF were staged on nearby asphalt pavement.

**4.103.3 Verification Sampling**

Verification sampling for the UPR-300-46 and 300-109 waste sites was performed on January 6, 2010. The sample design includes focused sampling from the soil below the identified french drain location at the 300-109 site, and a composite sample from within the entire waste staging pile area footprint. A focused sampling approach was used to evaluate the area beneath the 300-109 french drain. The focused sample was collected at the location of the former french drain. The french drain was removed in its entirety during remediation, leaving access to the underlying soil (at a depth of 3.7 m [12 ft] bgs); therefore, the focused sample was collected from the surface soil within the excavation.

**4.103.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed at ERDF. The remaining soil at the 300-109 waste site excavated areas has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the residential land use scenario and poses no threat to groundwater or the Columbia River. The 300-109 waste site was reclassified to a status of “Final Closed Out.”

**4.104 300-110, 333 BUILDING STORMWATER RUNOFF, MISCELLANEOUS STREAM #456****4.104.1 History**

The 300-110 waste site was located east of the southeast corner of the 333 Building. It consisted of a 40-cm (16-in.) drain with a metal grate labeled “Radioactive Material Internally Contaminated.” The drain had a dirt bottom that was approximately 60 cm (24 in.) below the surface of the asphalt. An overflow line drained to the 300-15 process sewer.

**4.104.2 Excavation Operations**

Field remediation activities at the 618-1 Burial Ground (including 300-110 waste site) were performed between September 17, 2008, and September 10, 2009. Approximately 47,332 metric tons (52,160 US tons) of soil and debris was excavated and disposed of at ERDF. No overburden stockpiles were associated with this excavation. Stockpile areas were utilized to segregate contaminated materials for treatment prior to disposal at ERDF. Waste encountered

during excavation of the 618-1 waste site (including 300-110 waste site) consisted mostly of contaminated soil, metal pipe, crucibles, laboratory glassware, empty metal containers, and some land disposal restricted (LDR) material. Twenty metal drums containing personal protective equipment were removed from the trenches. The personal protective equipment was about 80% decomposed. Several bottles containing liquid and/or powder were also removed.

#### **4.104.3 Verification Sampling**

Verification sampling was conducted on January 26 and 27, 2010. Each statistical verification sample consists of a composite of sample material from four designated random sample locations within each decision subunit. The number of decision subunits was determined by the overall footprint area of the decision unit, with the default number of verification samples for each decision unit being four composite samples. The 618-1 Burial Ground has both a shallow zone decision unit and a deep zone decision unit. Therefore, each composite sample was formed by combining soil collected at four randomly selected nodes within each sampling area. In addition, 21 focused samples were collected from the excavation area.

#### **4.104.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed at ERDF. The remaining soil at the 300-110 waste site excavated areas has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land use scenario and poses no threat to groundwater or the Columbia River. The 300-110 waste site has been reclassified to a status of “Final Closed Out.”

#### **4.105 300-111, 337 BUILDING STORMWATER RUNOFF, MISCELLANEOUS STREAM #516**

The 300-111 site was a catch basin that drained stormwater from the asphalt alley way used to access the trash and recycled cardboard pickup containers, and provide pedestrian access to the 337 Building. The site received stormwater only and has been classified “Not Accepted.”

#### **4.106 300-112, 340 P-3 PUMP PIT, RETENTION PROCESS SEWER PUMP PIT #3 FRENCH DRAIN, MISCELLANEOUS STREAM #428**

The 300-112 site consisted of a pump pit that was located at the southeast corner of the 307 Retention Basins. The drain was located at the bottom of the pit. The drain received leakage and drainage from the pump. The pump was flushed with clean service water during routine freeze protection maintenance. The source of the water was uncontaminated potable water. The flow rate was less than 0.038 L/min (0.01 gal/min). The pumps were removed and the piping has been removed and capped. The site has been reclassified to “Rejected.”

**4.107 300-113, 340 BUILDING STEAM CONDENSATE/WATER HEATER OVERFLOW, MISCELLANEOUS STREAM #341**

The 300-113 site consisted of a drain that was located at the southwest corner of the 340 Building. Before the steam utility was removed from the building the drain received steam condensate. When the site was active, the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The site has been reclassified to “Rejected.”

**4.108 300-114, 340A BUILDING STEAM CONDENSATE, MISCELLANEOUS STREAM #427**

The 300-114 site consisted of a drain that received steam condensate only. When the site was active the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-114 site has been reclassified to “Rejected.”

**4.109 300-115, 340B BUILDING BACKFLOW PREVENTER EMERGENCY DRAIN, MISCELLANEOUS STREAM #426**

The 300-115 site consisted of a french drain that was connected to the service water backflow preventer at the 340-B Building. There has been no known failure of the backflow preventer. Therefore, this site would not have received any discharge. The drain was located near the southeast corner of the 340-B Building. The steam source has been abandoned. The site has a “Not Accepted” classification status.

**4.110 300-116, 3506A BUILDING STEAM CONDENSATE, MISCELLANEOUS STREAM #381**

The 300-116 site was a french drain covered with a square metal lid. When the site was active, the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes this was a seasonal

discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The site has been reclassified to “Rejected.”

#### **4.111 300-117, 3506A BUILDING STEAM CONDENSATE, MISCELLANEOUS STREAM #382**

The 300-117 site was a french drain covered with a square metal lid. When the site was active, the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The site has been reclassified to “Rejected.”

#### **4.112 300-118, 3621D BUILDING STEAM CONDENSATE, MISCELLANEOUS STREAM #700, PIT U-7**

The 300-118 site was a french drain covered with a square metal lid located approximately 3.5 m (11.5 ft) east of the north entry door of the 3506A Building. When the site was active, the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The site has been reclassified to “Rejected.”

#### **4.113 300-119, 3621D HVAC CONDENSATE, MISCELLANEOUS STREAM #401, 3621D AIR/CONDENSATE BLOWDOWN DRAIN**

The 300-119 site was a drain constructed of an open corrugated metal pipe filled with rocks. The source is HVAC condensate and the source was abandoned in October 1996. The 300-119 site has been reclassified to “Rejected.”

#### **4.114 300-120, 3621D BUILDING DIESEL GENERATOR COOLING SYSTEM CONDENSATE, MISCELLANEOUS STREAM #402, 3621D AIR DRIVEN STARTER MOTOR DISCHARGE**

The 300-120 site was a concrete structure with a metal gate cover that was filled with rocks. The drain was located approximately 1.2 m (4 ft) from the west wall of the 3621D Building. The stream source was cooling water from the emergency diesel engines. The 300-120 site has been reclassified to “Rejected.”



**4.115 300-122, 366 BUILDING FUEL OIL BUNKER LOADING STATION STEAM CONDENSATE, MISCELLANEOUS STREAM #344**

The 300-122 site was a french drain that received steam condensate from the 366 Building fuel oil bunker loading station. The site is located southwest of the 3715 Building. Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The site has been reclassified to “Rejected.”

**4.116 300-123, 366 BUILDING FUEL OIL BUNKER LOADING STATION STEAM CONDENSATE FRENCH DRAIN, MISCELLANEOUS STREAM #342****4.116.1 History**

The 300-123, 366 Building Fuel Oil Bunker Loading Station Steam Condensate French Drain waste site was an underground injection well that received steam condensate from the 366 Building fuel oil bunker loading station. The effluent to this drain was eliminated when the 384 Powerhouse shut down in 1998 and stopped producing steam. The french drain was in the 300-6 excavation layback and was removed during the 300-6 waste site remediation activities.

**4.116.2 Excavation Operations**

Remediation of the waste site was performed from August 2 to December 8, 2010. The western portion of the 300-6 waste site excavation extended to groundwater, and a pool of water remained in the floor of the excavation. The excavation was approximately 15 m (49.5 ft) deep in the 300-6 west borehole location (when measured to the surface of the pool of water) and approximately 11.5 m (37.7 ft) deep in the 300-6 east borehole location. The 300-6 and associated waste sites' excavation resulted in approximately 34,770 BCM (45,477 BCY) of material removed for disposal at ERDF.

Debris (piping and concrete) and soil from the remediation of the 300-6 and associated waste sites were direct loaded to ERDF. No overburden soil stockpiles were associated with the waste sites as a result of WCH's remediation and no anomalies were noted. The 300-65, 300-66, 300-122, and 300-124 UICs were located within the footprint of the 300-6 excavation layback and removed during the excavation. The 3715, 303E, and 303J Building slabs were removed during the 300-6 waste site excavation because they were located in the excavation layback as well.

The 300-123 UIC was identified as a WIDS waste site; the french drain was removed as part of the layback to remove the contaminated soil at the 300-6 waste site. The french drain consisted

of soil and rock that extended to approximately 1.4 m (4.5 ft) bgs. Whereas, the existing floor of the 300-6 waste site excavation is approximately 11.3 m (37 ft) bgs.

#### **4.116.3 Verification Sampling**

Verification sampling for the 300-6 and associated waste sites (including 300-123) was conducted on August 24, 2011. Excavation of the 300-6 waste site extended to the water table; therefore, the vadose zone source of groundwater contamination has been removed to mitigate current and future impacts. The sample design for the 300-6 and associated waste sites consisted of a single decision unit for verification sampling. The sample design included 12 statistical samples and a single focus sample at the east borehole location. The verification sampling area was limited to the floor of the excavation where there was the greatest potential for residual contamination. The upper boundary of the sampling area was based on the civil survey performed for the excavation and was represented by the topographical line at the 111.5-m (365.8-ft) elevation mark. This sampling area stratum extended approximately 2 m (6.6 ft) beyond the eastern portion of the 300-6 waste site WIDS boundary and wrapped around the groundwater pool. Only surface contamination was expected at the 300-268 waste site as process knowledge indicated only dry processes were conducted in the 3741 Building. Therefore, the 300-268 waste site was included in the statistical sampling area.

#### **4.116.4 Statement of Protectiveness**

Remedial actions were performed to support future industrial land use and to protect groundwater and the Columbia River. Further, the achieved residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 m [15 ft] deep). The site extended into the deep zone (greater than 4.6 m [15 ft] deep); however, the site was closed out using the shallow zone direct exposure, groundwater, and river protection cleanup criteria. Results indicate that the site supports future land uses that can be represented (or bounded) by the residential land use scenario and poses no threat to groundwater or the Columbia River. The 300-123 waste site has been reclassified to a status of “Final Closed Out.”

#### **4.117 300-124, 366 BUILDING FUEL OIL BUNKER STEAM CONDENSATE, MISCELLANEOUS STREAM #653**

The 300-124 site was a french drain that received steam condensate from steam lines on top of the 366 Building oil bunker. No fuel oil stained soil was observed in the drain and there was no evidence of discharges to this site. The site has been reclassified to “Rejected.”

**4.118 300-125, 3702 BUILDING STEAM CONDENSATE, MISCELLANEOUS  
STREAM #346**

The 300-125 site was a french drain that collected steam condensate, associated with the 3702 Building. The former 3702 Building location is a cobble-covered field and no evidence of the site remained. The site has been reclassified to “Rejected.”

**4.119 300-126, 3703 BUILDING STEAM CONDENSATE, MISCELLANEOUS  
STREAM #431**

The 300-126 site was a french drain that collected steam condensate. The former 3703 Building location is a cobble and gravel-covered field with no evidence of a french drain location. When the site was active, the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-126 site has been reclassified to “Rejected.”

**4.120 300-127, 3705 BUILDING STORMWATER RUNOFF, MISCELLANEOUS  
STREAM #410**

The 300-127 site was a drywell located in a soil and gravel-covered area associated with the 3705 Building. Nearby, a roof drain pipe was seen extending down the outer wall of the 3705 Building into the ground. There was no process history associated with the 300-127 site. The site has a “Not Accepted” classification status.

**4.121 300-128, 3705 BUILDING STORMWATER RUNOFF, MISCELLANEOUS  
STREAM #411**

The 300-128 site was a drywell that collected stormwater runoff associated with the 3705 Building. The roof drain was observed from the 3705 Building; however, no drywell was visible at the site location. When the site was active it received stormwater runoff only. The site has a “Not Accepted” classification status.

**4.122 300-129, 3705 BUILDING STORMWATER RUNOFF, MISCELLANEOUS  
STREAM #412**

The 300-129 site consisted of a drywell that received stormwater discharge from the 3706 Building. The storm drain associated with the 300-129 site was removed during the 3705 Building slab demolition. The site has a “Not Accepted” classification status.

**4.123 300-130, 3705 BUILDING RUNOFF, MISCELLANEOUS STREAM #413**

The 300-130 site was a dry well that collected stormwater runoff. The site was associated with the 3705 Building. The storm drain associated with the 300-130 site was removed during 3705 Building slab demolition. The site has a “Not Accepted” classification status.

**4.124 300-131, 3706 FIRE SPRINKLER SYSTEM WATER, MISCELLANEOUS STREAM #515**

The 300-131 site was a french drain made from a clay pipe that received drainage from the fire sprinkler system. Based on the past practice activities at the 3706 Building and potential releases to the soil column, the disposal structure required surveying to determine if radioactive contamination was present. The disposal structure was located immediately adjacent to the 3607 Building. The 300-131 site was reclassified to “Rejected” in 1998, and was later “Consolidated” for disposition with the 300-46 waste site.

**4.125 300-132, 3706 BUILDING STEAM CONDENSATE, MISCELLANEOUS STREAM #368**

The 300-132 site consisted of a french drain that received steam condensate located on the east side of the 3706 Building. When the site was active the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-132 site was reclassified to “Rejected” in 1999 and, later, “Consolidated” for disposition with the 300-46 waste site.

**4.126 300-133, 3706 BUILDING STEAM CONDENSATE, MISCELLANEOUS STREAM #367, INJECTION WELL #27**

The 300-133 site was a french drain that received steam condensate located east of the 3706 Building. When the site was active, the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-133 site was reclassified to “Rejected” in 1999 and, later, “Consolidated” for disposition with the 300-46 waste site.

**4.127 300-134, 3706 BUILDING STEAM CONDENSATE, MISCELLANEOUS  
STREAM #362**

The 300-134 site was a french drain that received steam condensate located in the eastern courtyard of the 3706 Building. When the site was active, the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-134 site was reclassified to “Rejected” in 1999 and, later, “Consolidated” for disposition with the 300-46 waste site.

**4.128 300-135, 3706 BUILDING STEAM CONDENSATE, MISCELLANEOUS  
STREAM #365**

The 300-135 site was a french drain that received steam condensate. The site was located within the 300-46 site, which estimates the extent of extensive uranium, transuranic, and chemical contamination of the 3706 Building and the surrounding area. The site was reclassified to “Rejected” in 1998 and, later, “Consolidated” for disposition with the 300-46 waste site.

**4.129 300-136, 3706 BUILDING STEAM CONDENSATE, MISCELLANEOUS  
STREAM #366**

The 300-136 site was a french drain that received steam condensate located on the north side of the 3706 Building. When the site was active, the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-136 site was reclassified to “Rejected” in 1998 and, later, “Consolidated” for disposition with the 300-46 waste site.

**4.130 300-137, 3706 BUILDING STEAM CONDENSATE, MISCELLANEOUS  
STREAM #440**

The 300-137 site was a french drain that received steam condensate located on the north side of the 3706 Building. When the site was active, the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use.

When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-137 site was reclassified to “Rejected” in 1999 and, later, “Consolidated” for disposition with the 300-46 waste site.

#### **4.131 300-138, 3706 BUILDING STEAM CONDENSATE, MISCELLANEOUS STREAM #360**

The 300-138 site was a french drain that received steam condensate, located in the eastern courtyard of the 3706 Building. When the site was active, the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-138 site was reclassified to “Rejected” in 1999, and later “Consolidated” for disposition with the 300-46 waste site.

#### **4.132 300-139, 3706 BUILDING STEAM CONDENSATE, MISCELLANEOUS STREAM #357**

The 300-139 site was a french drain that received steam condensate. The site was located within the 300-46 site, which estimated the extent of extensive uranium, transuranic, and chemical contamination of the 3706 Building and the surrounding area. The site was reclassified to “Rejected” in 1999 and, later, “Consolidated” for disposition with the 300-46 waste site.

#### **4.133 300-140, 3706 BUILDING STEAM CONDENSATE, MISCELLANEOUS STREAM #356**

The 300-140 site was a french drain that received steam condensate located on the north side of the 3706 Building. Standing water was observed inside the drain during a walkdown in 1998. Because there was no rainfall for almost 2 weeks prior to the observation, it was determined that the drain may have also received fire sprinkler water in addition to steam condensate. The site was located within the 300-46 site, which estimated the extent of extensive uranium, transuranic, and chemical contamination of the 3706 Building and the surrounding area. The site was reclassified to “Rejected” in 1999 and, later, “Consolidated” for disposition with the 300-46 waste site.

**4.134 300-141, 3706 BUILDING STEAM CONDENSATE, MISCELLANEOUS  
STREAM #439, INJECTION WELL #29**

The 300-141 site was a french drain that received steam condensate located on the south side of the 3706 Building. The site was located within the 300-46 site, which estimated the extent of extensive uranium, transuranic, and chemical contamination of the 3706 Building and the surrounding area. The site was reclassified to “Rejected” in 1999 and, later, “Consolidated” for disposition with the 300-46 waste site.

**4.135 300-142, 3706 BUILDING STEAM CONDENSATE, MISCELLANEOUS  
STREAM #369, INJECTION WELL #30**

The 300-142 site was a french drain that received steam condensate located on the south side of the 3706 Building. The bottom of the drain was observed to be covered with debris. The site was located within the 300-46 site, which estimated the extent of extensive uranium, transuranic, and chemical contamination of the 3706 Building and the surrounding area. The site was reclassified to “Rejected” in 1999 and, later, “Consolidated” for disposition with the 300-46 waste site.

**4.136 300-143, 3706 BUILDING STEAM CONDENSATE, MISCELLANEOUS  
STREAM #361**

The 300-143 site was a french drain that received steam condensate, located in the eastern courtyard of the 3706 Building. The site was located within the 300-46 site, which estimated the extent of extensive uranium, transuranic, and chemical contamination of the 3706 Building and the surrounding area. The site was reclassified to “Rejected” in 1999 and, later, “Consolidated” for disposition with the 300-46 waste site.

**4.137 300-144, 3706 BUILDING STEAM CONDENSATE, MISCELLANEOUS  
STREAM #358**

The 300-144 site was a french drain that received steam condensate located in the middle courtyard of the 3706 Building. The site located within the 300-46 site, which estimated the extent of extensive uranium, transuranic, and chemical contamination of the 3706 Building and the surrounding area. The site was reclassified to “Rejected” in 1999 and, later, “Consolidated” for disposition with the 300-46 waste site.

**4.138 300-145, 3706 BUILDING STEAM CONDENSATE, MISCELLANEOUS  
STREAM #438, INJECTION WELL #25**

The 300-145 site was a french drain that received steam condensate located on the west wall of the 3706 Building. The site was located within the 300-46 site, which estimated the extent of extensive uranium, transuranic, and chemical contamination of the 3706 Building and the surrounding area. The site was reclassified to “Rejected” in 1999 and, later, “Consolidated” for disposition with the 300-46 waste site.

**4.139 300-146, 3706 BUILDING STORMWATER RUNOFF, MISCELLANEOUS  
STREAM #364**

The 300-146 site was a french drain that received steam condensate located in the eastern courtyard of the 3706 Building. The site was located within the 300-46 site, which estimated the extent of extensive uranium, transuranic, and chemical contamination of the 3706 Building and the surrounding area. The site was reclassified to “Rejected” in 1999 and, later, “Consolidated” for disposition with the 300-46 waste site.

**4.140 300-147, 3706 BUILDING STORMWATER RUNOFF, MISCELLANEOUS  
STREAM #363**

The 300-147 site was a french drain located in the eastern courtyard of the 3706 Building. The french drain received stormwater runoff near the 3706 Building. The site was located within the 300-46 site, which estimated the extent of extensive uranium, transuranic, and chemical contamination of the 3706 Building and the surrounding area. The site was reclassified to “Rejected” in 1999 and, later, “Consolidated” for disposition with the 300-46 waste site.

**4.141 300-148, 3706 BUILDING STORMWATER RUNOFF, MISCELLANEOUS  
STREAM #359, INJECTION WELL #22**

The 300-148 site was a french drain located west of the northwest corner of the 3706 Building. The french drain received stormwater runoff near the 3706 Building. The site was located within the 300-46 site, which estimated the extent of extensive uranium, transuranic, and chemical contamination of the 3706 Building and the surrounding area. The site was reclassified to “Rejected” in 1999 and, later, “Consolidated” for disposition with the 300-46 waste site.

**4.142 300-149, 3706A BUILDING STEAM CONDENSATE, MISCELLANEOUS  
STREAM #432, INJECTION WELL #28**

The 300-149 site was a french drain that received steam condensate located east of the 3706A east entrance door. The site was located within the 300-46, which estimated the extent of



extensive uranium, transuranic, and chemical contamination of the 3706 Building and the surrounding area. The site was reclassified to “Rejected” in 1999 and, later, “Consolidated” for disposition with the 300-46 waste site.

**4.143 300-150, 3706A BUILDING STEAM CONDENSATE, MISCELLANEOUS  
STREAM #432, INJECTION WELL #28**

The 300-150 site was a french drain that received steam condensate only located on the north side of the 3706 Building. The site was inactive, source abandoned, and the stream was eliminated in June 1998. The site has been reclassified to “Rejected.”

**4.144 300-151, 3706A BUILDING STEAM CONDENSATE, MISCELLANEOUS  
STREAM #432, INJECTION WELL #28**

The 300-151 site was a french drain located just north of the former 3707B Building. When the site was active, it received less than 0.038 L/min (0.01 gal/min) of steam condensate only. The site has been reclassified to “Rejected.”

**4.145 300-152, 3706A BUILDING STEAM CONDENSATE, MISCELLANEOUS  
STREAM #432, INJECTION WELL #28**

The 300-152 site was a french drain located northeast of the 3707B Building. The site was inactive, source abandoned, and the stream was eliminated in June 1998. The site has been reclassified to “Rejected.”

**4.146 300-153, 3707B BUILDING STEAM CONDENSATE, MISCELLANEOUS  
STREAM #328**

The 300-153 site was a french drain located on the northwest corner of the 3707B Building. The drain received steam condensate. When the site was active, the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-153 site has been reclassified to “Rejected.”

**4.147 300-154, 3707B BUILDING STEAM CONDENSATE, MISCELLANEOUS  
STREAM #325**

The 300-154 site consisted of a pipe descending from the overhead steam line discharged directly onto the ground. When the site was active, the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-154 site has been reclassified to "Rejected."

**4.148 300-155, 3707C BUILDING STEAM CONDENSATE, MISCELLANEOUS  
STREAM #179, INJECTION WELL #24**

The 300-155 site was a french drain that received stream condensate located near the center of the south side of the former 3707C Building. When the site was active the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-155 site has been reclassified to "Rejected."

**4.149 300-156, 3707C BUILDING STEAM CONDENSATE, MISCELLANEOUS  
STREAM #178, INJECTION WELL #23**

The 300-156 site was a french drain that received steam condensate. The site was associated with the 300-15 process sewer and 3707C Building, which has been demolished. When the site was active the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-156 site has been reclassified to "Rejected."

**4.150 300-157, 3707C BUILDING STEAM CONDENSATE, MISCELLANEOUS  
STREAM #337**

The 300-157 site was a french drain that received steam condensate. When the site was active the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was

introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-157 site has been reclassified to “Rejected.”

#### **4.151 300-158, 3707C BUILDING STEAM CONDENSATE, MISCELLANEOUS STREAM #336, F.D. #31**

The 300-158 site was a french drain that received steam condensate. When the site was active the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-158 site has been reclassified to “Rejected.”

#### **4.152 300-159, 3707C BUILDING STEAM CONDENSATE, MISCELLANEOUS STREAM #335, F.D. #4**

The 300-159 site was a french drain that received steam condensate located on the west side of the former 3707C Building. When the site was active the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-159 site was associated with the 3707C Building, which has been demolished. The 300-159 site has been reclassified to “Rejected.”

#### **4.153 300-160, 3707D BUILDING STEAM CONDENSATE, MISCELLANEOUS STREAM #443, INJECTION WELL #10**

The 300-160 site was a rectangular concrete structure associated with the 3707D steam condensate. The site was located 3 m (10 ft) from the south side of the 3707D Building. When the site was active the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-160 site has been reclassified to “Rejected.”

**4.154 300-161, 3707D BUILDING STORMWATER RUNOFF, MISCELLANEOUS STREAM #441**

The 300-161 site was a drain with a perforated metal cover located on the northwest side of the 3707D Building. The site received surface runoff from a paved area adjacent to the 3707D Building. The site has been reclassified to “Rejected.”

**4.155 300-162, 3707D BUILDING STORMWATER RUNOFF, MISCELLANEOUS STREAM #442**

The 300-162 site was a drain with a perforated metal cover located on the northeast side of the 3707D Building. The site received surface runoff from a paved area adjacent to the 3707D Building. The site has been reclassified to “Rejected.”

**4.156 300-163, 3708 BUILDING STEAM CONDENSATE, MISCELLANEOUS STREAM #423**

The 300-163 site was a french drain that received steam condensate from the 3708 Building, located on the east side of the 3708 Building. Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-163 site has been reclassified to “Rejected.”

**4.157 300-164, 3709 BUILDING STEAM CONDENSATE, MISCELLANEOUS STREAM #338, F.D. #3**

The 300-164 site was a french drain that received steam condensate. The site was associated with the 3709 Building. When the site was active the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-164 site has been reclassified to “Rejected.”

**4.158 300-165, 3709A BUILDING CONDENSATE, MISCELLANEOUS  
STREAM #347**

The 300-165 site was an injection well that was associated with the 3709A Building. The site is inactive and located adjacent to the west wall of the 3709A Fire Station. The injection well has been reclassified to “Rejected.”

**4.159 300-166, 3709A BUILDING STEAM TRAP, MISCELLANEOUS  
STREAM #355**

The 300-166 site is an injection well that was a steam trap. The site is associated with the 3709A Building and is located in the asphalt parking area on the south side of the 3709A Fire Station. The injection well has been reclassified to “Rejected.”

**4.160 300-167, 3711 BUILDING STEAM CONDENSATE, MISCELLANEOUS  
STREAM #343**

The site was a french drain that received steam condensate located on the north side of the 3711 Building. When the site was active the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-167 site has been reclassified to “Rejected.”

**4.161 300-168, 3711 BUILDING STEAM CONDENSATE MISCELLANEOUS  
STREAM #433**

The 300-168 site was a french drain that received steam condensate located on the south side of the 3711 Building. When the site was active, the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-167 site has been reclassified to “Rejected.”

**4.162 300-169, 3712 BUILDING STEAM CONDENSATE, MISCELLANEOUS STREAM #351**

The 300-169 site was a french drain that received steam condensate located on the east side of the 3712 Building. The site was reclassified to “Rejected.”

**4.163 300-170, 3712 BUILDING STEAM CONDENSATE, MISCELLANEOUS STREAM #437**

The 300-170 site was a french drain that received steam condensate located on the north side of the 3712 Building. The 300-170 french drain has been reclassified to “Rejected.”

**4.164 300-171, 3713 BUILDING STEAM CONDENSATE AND STORMWATER RUNOFF, MISCELLANEOUS STREAM #333, F.D. #7**

The 300-171 site was a french drain that received stormwater only located at the northwest corner of the 3713 Building. The site has been reclassified to “Rejected.”

**4.165 300-172, 3713 BUILDING STEAM CONDENSATE, MISCELLANEOUS STREAM #435**

The 300-172 site was an injection well that received steam condensate located on the southwest corner of the 3713 Building. When the site was active the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-172 site has been reclassified to “Rejected.”

**4.166 300-173, 3713 BUILDING STEAM CONDENSATE, MISCELLANEOUS STREAM #512**

The 300-173 site was a french drain that received steam condensate located southwest of the 3713 Building. When the site was active the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-173 site has been reclassified to “Rejected.”

**4.167 300-174, 3713 BUILDING STORMWATER RUNOFF AND STEAM CONDENSATE, MISCELLANEOUS STREAM #544**

The 300-174 site was a french drain that received stormwater and steam condensate. The site was located in the east side of the 3713 Building. The flow rate was less than 3.8 L/min (1 gal/min) or stormwater and steam condensate. The 300-174 site has been reclassified to “Rejected” in 1998, and then consequently removed to 0.9 m (3 ft) below grade during demolition of the 3713 Building slab.

**4.168 300-176, 3713 BUILDING STORMWATER RUNOFF AND STEAM CONDENSATE, MISCELLANEOUS STREAM #544**

The 300-176 site was a rectangular valve pit with a dirt floor. Steam condensate was discharged onto the floor of the pit. The site was located between the 3715 Building and the 303E Building. When the site was active, the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-176 site has been reclassified to “Rejected.”

**4.169 300-177, 3717 BUILDING STEAM CONDENSATE, MISCELLANEOUS STREAM #330**

The 300-177 site was an injection well that received steam condensate located on the southeast corner of the 3717 Building. When the site was active the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-177 site has been reclassified to “Rejected.”

**4.170 300-178, 3717 BUILDING STEAM CONDENSATE, MISCELLANEOUS STREAM #329**

The 300-178 site was a french drain that received steam condensate located south of the 3717 Building. When the site was active the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for

heating purposes this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-178 site has been reclassified to “Rejected.”

**4.171 300-179, 3717 BUILDING STEAM CONDENSATE, MISCELLANEOUS  
STREAM #324**

The 300-179 site was a french drain that received steam condensate located on the southwest corner of the 3717 Building. When the site was active the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-179 site has been reclassified to “Rejected.”

**4.172 300-180, 3717 BUILDING STORMWATER RUNOFF, MISCELLANEOUS  
STREAM #545**

The 300-180 site was a french drain that was a clay pipe covered by a perforated metal lid that received stormwater runoff. The site was located on the south side of the 3717 Building. The 300-180 site has a “Not Accepted” classification status.

**4.173 300-181, 3717 BUILDING STEAM CONDENSATE, MISCELLANEOUS  
STREAM #180**

The 300-181 site was a french drain that received steam condensate located on the east side of the 3717 Building. When the site was active the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-181 site has been reclassified to “Rejected.”

**4.174 300-182, 3717B BUILDING STEAM CONDENSATE, MISCELLANEOUS  
STREAM #323**

The 300-182 site was a french drain that received steam condensate located on the north side of the 3717B Building. When the site was active the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water



softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-182 site has been reclassified to “Rejected.”

**4.175 300-183, 3718 BUILDING STEAM CONDENSATE, MISCELLANEOUS  
STREAM #340, F.D. #40**

The 300-183 site was a french drain that received steam condensate located on the southwest corner of the 3717B Building. When the site was active the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-183 site has been reclassified to “Rejected.”

**4.176 300-184, 3718A BUILDING STORMWATER RUNOFF, MISCELLANEOUS  
STREAM #270**

The 300-184 consisted of galvanized pipes drain that received roof stormwater runoff located on the north side of the 3718A Building. The site has a “Not Accepted” classification status.

**4.177 300-185, 3722 BUILDING STEAM CONDENSATE MISCELLANEOUS  
STREAM #436, INJECTION WELL #6**

The 300-185 site was a french drain that received steam condensate located on the northwest corner of the 3722 Building. When the site was active the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-185 site has been reclassified to “Rejected.”

**4.178 300-186, 3730 BUILDING STEAM CONDENSATE, MISCELLANEOUS  
STREAM #383**

The 300-186 site was a french drain that received steam condensate located near the southwest corner of the 3730 Building. When the site was active the flow rate was less than 0.038 L/min

(0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-186 site has been reclassified to "Rejected."

#### **4.179 300-187, 3730 BUILDING STEAM CONDENSATE, MISCELLANEOUS STREAM #421**

The 300-187 site was a french drain that received steam condensate located on the north side of the 3730 Building. When the site was active the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-187 site has been reclassified to "Rejected."

#### **4.180 300-188, 3730 BUILDING STEAM CONDENSATE, MISCELLANEOUS STREAM #420**

The 300-188 site was a french drain that received steam condensate located on the northwest side of the 3730 Building. When the site was active the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-188 site has been reclassified to "Rejected."

#### **4.181 300-189, 3731 BUILDING STEAM CONDENSATE, MISCELLANEOUS STREAM #269**

The 300-189 site was a french drain that received steam condensate located adjacent to the east wall of the 3731 Building. When the site was active the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-189 site has been reclassified to "Rejected."

**4.182 300-190, 3731 BUILDING STORMWATER RUNOFF, MISCELLANEOUS STREAM #517**

The 300-190 site was a french drain that received stormwater runoff only located on the northeast corner of the 3731 Building. The site has a “Not Accepted” classification status.

**4.183 300-191, 3731 BUILDING STORMWATER RUNOFF, MISCELLANEOUS STREAM #518**

The 300-191 site was a french drain that received steam condensate located on the southeast corner of the 3731 Building. The site has a “Not Accepted” classification status.

**4.184 300-192, 3732 BUILDING STEAM CONDENSATE, MISCELLANEOUS STREAM #349**

The 300-192 site was a french drain that received steam condensate located on the southwest corner of the 3732 Building. When the site was active the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-192 site has been reclassified to “Rejected.”

**4.185 300-193, 3732 BUILDING STEAM CONDENSATE, MISCELLANEOUS STREAM #349**

The 300-193 site was a french drain that received steam condensate located on the northwest corner of the 3732 Building. When the site was active the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-193 site has been reclassified to “Rejected.”

**4.186 300-194, 3734 BUILDING STEAM CONDENSATE, MISCELLANEOUS  
STREAM #334, F.D. #8**

The 300-194 site was a french drain that received steam condensate. The site was associated with the 3734 Building. When the site was active the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-194 site has been reclassified to “Rejected.”

**4.187 300-195, 3734A BUILDING STEAM CONDENSATE, MISCELLANEOUS  
STREAM #519**

The 300-195 site was a french drain that received steam condensate. The site was associated with the 3734A Building. When the site was active the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-195 site has been reclassified to “Rejected.”

**4.188 300-196, 3745 BUILDING STEAM CONDENSATE, MISCELLANEOUS  
STREAM #399**

The 300-196 site was a concrete sump that received steam condensate located on the south side of the 3745 Building. When the site was active the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-196 site has been reclassified to “Rejected.”

**4.189 300-197, 3745 BUILDING STEAM CONDENSATE, MISCELLANEOUS  
STREAM #398, INJECTION WELL #5**

The 300-197 site was an injection well that received steam condensate located on the east side of the 3745 Building. When the site was active the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water

softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-197 site has been reclassified to “Rejected.”

#### **4.190 300-198, 3745 BUILDING STEAM CONDENSATE, MISCELLANEOUS STREAM #397, INJECTION WELL #1**

The 300-198 site was a french drain that received steam condensate located on the northeast corner of the 3745 Building. When the site was active the flow rate was less than 0.19 L/min (0.05 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-198 site has been reclassified to “Rejected.”

#### **4.191 300-199, 3745B BUILDING STEAM CONDENSATE, MISCELLANEOUS STREAM #380**

The 300-199 site was a french drain that received steam condensate located on the west of the 3745A Building. When the site was active the flow rate was less than 0.19 L/min (0.05 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-199 site has been reclassified to “Rejected.”

#### **4.192 300-200, 3745B BUILDING STEAM CONDENSATE, MISCELLANEOUS STREAM #379**

The 300-200 site was a french drain that received steam condensate located on the north side of the 3745B Building. Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-200 site has been reclassified to “Rejected.”

**4.193 300-201, 3762 BUILDING STEAM CONDENSATE, MISCELLANEOUS  
STREAM #491, INJECTION WELL #42**

The 300-201 site was a french drain that received steam condensate located on the northeast corner of the 3762 Building. Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-201 site has been reclassified to “Rejected.”

**4.194 300-202, 3765 BUILDING HVAC CONDENSATE, MISCELLANEOUS  
STREAM #345**

The 300-202 site was a french drain that received HVAC condensate located east of the 3763 and 3764 Buildings. Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-202 site has been reclassified to “Rejected.”

**4.195 300-203, 377 BUILDING STEAM CONDENSATE, MISCELLANEOUS  
STREAM #446, INJECTION WELL #36**

The 300-203 site was a french drain that received steam condensate located north of the 377 Building. Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-203 site has been reclassified to “Rejected.”

**4.196 300-204, 3790 BUILDING STORMWATER RUNOFF, MISCELLANEOUS  
STREAM #378, F.D. #19, INJECTION WELL #19**

The 300-204 site was a french drain that received stormwater runoff located on the east side of the 3790 Building. The site received stormwater from drain at the bottom of the east stairwell and three drains in the 3790 courtyard. When the stream was active the flow rate was less than 0.038 L/min (0.01 gal/min). The site has a “Not Accepted” classification status.

**4.197 300-205, 3790 BUILDING STORMWATER RUNOFF, MISCELLANEOUS  
STREAM #377, F.D. #18, INJECTION WELL #18**

The 300-205 site was a french drain that received stormwater runoff located on the west side of the 3790 Building. The site received stormwater from drain at the bottom of the east stairwell and three drains in the 3790 courtyard. When the stream was active the flow rate was less than 0.038 L/min (0.01 gal/min). The 300-205 site has a “Not Accepted” classification status.

**4.198 300-206, 3790 BUILDING STORMWATER RUNOFF, MISCELLANEOUS  
STREAM #373**

The 300-206 site was a french drain that received stormwater runoff located north of the southwest corner of the 3790 Building. When the stream was active the flow rate was less than 0.038 L/min (0.01 gal/min). The 300-206 site has a “Not Accepted” classification status.

**4.199 300-207, 3790 BUILDING STORMWATER RUNOFF, MISCELLANEOUS  
STREAM #375, F.D. #16, INJECTION WELL #16**

The 300-207 site was a french drain that received stormwater runoff located west of the 3790 Building. When the stream was active the flow rate was less than 0.038 L/min (0.01 gal/min). The 300-207 site has a “Not Accepted” classification status.

**4.200 300-208, 3790 BUILDING STORMWATER RUNOFF, MISCELLANEOUS  
STREAM #376, F.D. #17, INJECTION WELL #17**

The 300-208 site was a french drain that received stormwater runoff located on the west side of the 3790 Building. When the stream was active the flow rate was less than 0.038 L/min (0.01 gal/min). The 300-208 site has a “Not Accepted” classification status.

**4.201 300-209, 3790 BUILDING STORMWATER RUNOFF, MISCELLANEOUS  
STREAM #374**

The 300-209 site was a french drain that received stormwater runoff located at the bottom of the north stairwell within the 3790 Building. When the stream was active the flow rate was less than 0.038 L/min (0.01 gal/min). The 300-209 site has a “Not Accepted” classification status.

**4.202 300-210, 3790 BUILDING STORMWATER RUNOFF, MISCELLANEOUS STREAM #514**

The 300-210 site was a french drain that received stormwater runoff located on the west site of the 3790 Building, at the bottom of the south stairwell. When the stream was active the flow rate was less than 0.038 L/min (0.01 gal/min). The 300-210 site has a “Not Accepted” classification status.

**4.203 300-211, 382 BUILDING STEAM CONDENSATE, MISCELLANEOUS STREAM #429**

The 300-211 site was a french drain that received steam condensate located at the northwest corner of the north wing of the 382 Building. Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-203 site has been reclassified to “Rejected.”

**4.204 300-212, MO010 BUILDING STEAM CONDENSATE SUMP, MISCELLANEOUS STREAM #400**

The 300-212 site consisted of a concrete condensate sump that received steam condensate located south of the 3745 Building. Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-212 site has been reclassified to “Rejected.”

**4.205 300-213, WEST HIGH TANK (WATER TOWER) OVERFLOW AND STEAM CONDENSATE, MISCELLANEOUS STREAM #332**

The 300-213 site was a french drain that received steam condensate and overflow from a water tower located next to the southwest leg of the water tower south of the 3711 Building. Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-213 site has been reclassified to “Rejected.”



**4.206 300-214:1, REMOVED SECTIONS OF THE 300 AREA RETENTION  
PROCESS SEWER****4.206.1 History**

The 300-214:1 subsite consisted of 300-214, 300 Area Retention Process Sewer (RPS) pipelines that were remediated prior to 2015. The 300-214:2 subsite consists of 300 Area RPS retained pipeline sections that could not be remediated due to interference with active facilities and/or utilities.

The RPS collected nonhazardous, potentially radiologically contaminated waste from the 324, 325, 326, 327, and 329 Buildings. When the 308 Building was active it also generated effluent that was discharged to the RPS. The potentially contaminated effluent was transported to the 307 Retention Basins. The retention basins were periodically sampled and analyzed. In later years of operation, effluent below a predetermined level (5,000 picocuries per liter) was discharged from the basins through the Process Sewer to the 300 Area Treated Effluent Disposal Facility. Effluent above the discharge criteria was held for truck or rail transport to the 200 Area double shell tanks. Beta-gamma detectors in the four diverters at the laboratory building monitored the RPS waste activity. Prior to October 1, 1998, if the RPS effluent was radiologically contaminated it was diverted to the 300 Area RLWS.

**4.206.2 Excavation Operations**

Remediation of the 300-214:1 subsite was performed from May 13 through November 20, 2014. Approximately 5,643 BCM (7,381 BCY) of excavated materials were removed and direct loaded for disposal at ERDF. Waste materials consisted of contaminated soil, gravel, pipe, and concrete. No overburden soil was salvaged from the 300-214:1 subsite excavation and no staging pile areas were utilized. Portions of the 300-214:1 pipeline segments located within the 340 Complex waste site and the 309 Building remediation boundaries were subsequently removed and disposed. The GPERS surveys were performed within the 300-214:1 subsite following the site remedial action. No elevated readings (above background levels) were detected within the 300-214:1 excavation area.

**4.206.3 Verification Sampling**

The 300-214:1 subsite verification sampling design was combined with the 300 RLWS:1, 300 RLWS:2, 300 RRLWS:1 subsites due to substantial overlap in excavations for these subsites. Verification sampling for the 300 RLWS:1, 300 RLWS:2, 300 RRLWS:1, and 300-214:1 subsites was performed on December 3, 2014, January 8, 2015, and March 12, 2015. At least 13 samples were collected to represent each pipeline subsite. A total of 24 verification samples were collected from the combined 300 RLWS:1, 300 RLWS:2, 300 RRLWS:1, and 300-214:1 subsite excavation.

**4.206.4 Statement of Protectiveness**

The contaminated materials from the 300-214:1 site have been excavated and disposed at ERDF. The remaining soil at the 300-241:1 subsite excavated areas has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land use scenario and poses no threat to groundwater or the Columbia River. The 300-214:1 subsite was reclassified to a status of “Final Closed Out.”

**4.207 300-215, 300 AREA SOUTH**

The 300-215 site consisted of many different features. Much of the site was covered with vegetation such as cheatgrass and sagebrush. Vestiges of irrigation canals and groundwater monitoring wells were found throughout the site. One drywell, windblown garbage, and tumbleweeds were found at the site. Some older material near an irrigation canal may pre-date Hanford (e.g., porcelain china, battery cores, cans, and glass). A large diameter buried water line installed in the early 1990s was located in the southern part of the site. Underground electrical, water, and telephone lines were present on the site. There was no process history associated with the 300-215 waste site. The location and areal extent of 300-215 encompassed Stevens Drive on the west, Horn Rapids Road on the South, the Columbia River on the east, and the southern 300 Area fence line on the north. It was determined that the area associated with this waste site required no further action under CERCLA. The site has been reclassified to “Rejected.”

**4.208 300-217, 300 AREA LAYDOWN YARD**

The 300-217 site was a construction laydown area for construction materials. Construction materials observed at the site included Conex boxes, steel pipe, ladders, steel, plastic pipe, wood pallets, insulation material, and railroad ties. Several vehicles were also stored at the site. Most of the material was stored off the ground on racks. An electrical structure was located in the northwest part of the site, with four manholes south of the structure. A minor amount of blown-in paper was observed. A large borrow pit was also found south of the site. The treated wood was removed from the laydown yard and was shipped to a permitted solid waste landfill in March 1996. There is no knowledge of wood preservative to have been released to the ground during temporary storage and a visual site inspection in July 1997 did not reveal any stains on the soil from temporary storage of treated wood. The site has a “Not Accepted” classification status.

**4.209 300-218, 314, 314A AND 314B BUILDINGS, ENGINEERING DEVELOPMENT LABORATORY****4.209.1 History**

The 300-218 waste site consisted of the 314 Building and the associated 314A and 314B Buildings. Both the 314A and 314B Buildings were attached to the 314 Building. The three 314 Buildings were collectively known as the Engineering Development Laboratory. The 314 Building was originally known as the Press Building and was built in 1944. The 314A Building was known as the autoclave pit and was attached to the northeast corner of the 314 Building. This structure was contaminated by the autoclave process. The 314B Building was known as the Stress Rupture Test Facility but has also been called the High Temperature and Pressure Facility, among other designations. The 314B facility was attached to the northwest corner and north edge of the 314 Building.

**4.209.2 Excavation Operations**

Remedial action activities at the 300-16:2, 300-24, 300-80, and 300-218 waste sites were carried out from December 21, 2009, to May 20, 2010. The excavation reached a maximum depth of 3 m (9.8 ft) near the center and southwest corner of the collective waste sites. Approximately 6,275 m<sup>3</sup> (14,995 tons) of materials were removed from the waste sites' excavation and direct loaded for disposal at ERDF. There is no waste staging pile area footprint or overburden soil stockpile associated with these waste sites. The autoclave pit underlying the former 314A Building was removed.

**4.209.3 Verification Sampling**

Verification sampling for the 300-16:2, 300-24, 300-80, and 300-218 waste sites was performed on March 30, 2011. The excavation area footprint was the only decision unit identified for the 300-16:2, 300-24, 300-80, and 300-218 waste sites for verification sampling. Twelve soil sample locations were identified.

**4.209.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed at ERDF. The remaining soil at the 300-218 waste site excavated areas has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land use scenario and poses no threat to groundwater or the Columbia River. The 300-218 waste site was reclassified to a status of "Final Closed Out."

**4.210 300-219, 300 AREA WASTE ACID TRANSFER LINE****4.210.1 History**

The 300-219 waste site consisted of the transfer lines inside the 300-224 WATS trench. The 300-224 WATS trench ran between the 313 Building, the 303-F Building, the 311 Tank Farm, the 333 Building, the 334 A Building, and the 334 Tank Farm.

**4.210.2 Excavation Operations**

Remediation of the 300-219 and 300-224 waste sites was performed from December 14, 2009, through May 23, 2011. The majority of the soil within the waste sites' footprint was excavated to a depth of 0.5 to 1 m (1.6 to 3.3 ft) bgs. The soil under the 300-224 loading area was excavated to a depth of over 1.5 m (4.9 ft) bgs. The resulting 541 BCM (708 BCY) of soil was disposed at ERDF.

**4.210.3 Verification Sampling**

Verification sampling for the 300-219, 300-224, and 333 West Side Tank Farm (WSTF) waste sites was conducted August 25, 2011. A focused sampling design was selected for the 300-219, 300 224, and 333 WSTF waste sites based primarily on endpoints and intersections of the pipelines. Seventeen verification focused samples were collected from the 300-219, 300-224, and 333 WSTF waste site excavation.

**4.210.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed at ERDF. The remaining soil at the 300-219 waste site excavated areas has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land use scenario and poses no threat to groundwater or the Columbia River. The 300-219 waste site was reclassified to a status of "Final Closed Out."

**4.211 300-220, GRAVEL PIT #7, PIT 7**

The 300-220 site was a manmade depression identified as Gravel Pit #7. The surface consisted of sand and gravel with some cobbles and a light vegetation cover of bunch grass and small sage. Trace fragments of concrete and asphalt were observed along the depression margins. Although the 300-220 site was included in the general radiologically controlled area north of the 300 Area, there were no site specific radiological postings. The pit was used as a source of sand and dirt for backfill material. The use of pit was discontinued because the area surrounding the pit was found to be contaminated. The 300-220 site has a "Not Accepted" classification status.

**4.212 300-222, 384-W BRINE PIT, 384-W SALT DISSOLVING PIT AND BRINE PUMP PIT**

The 300-222 site consisted of a brine pit and a concrete underground storage pit. The pit was cleaned out and filled with sand/gravel in May 1998. The steam system used “soft” water. Water from the Water Filter Plant (315 Building) ran through a water softening process before going to the boilers. The brine was used to regenerate the ion exchange demineralizers in the water softeners. The brine pit was partially removed during the demolition of the 384 Building in 2008. The 300-222 site has been reclassified to “Rejected.”

**4.213 300-223, 334 POWERHOUSE FUEL OIL DAY TANKS #1 AND #2****4.213.1 History**

The 300-223 waste site consisted of the Day Tanks where the fuel oil was pumped from the larger fuel oil bunkers. A heater inside the Day Tanks kept the oil temperature at 120 degrees Fahrenheit. The oil was used to fuel the 384 Powerhouse boilers to create steam.

**4.213.2 Excavation Operations**

The 300-223 tanks were removed, cleaned, and sold as scrap metal in June 1999. Visual inspection of the tanks indicated they were in good condition with no evidence of deterioration to the point that product would leak from them. Approximately 600 m<sup>3</sup> (784.8 yd<sup>3</sup>) of contaminated soil was removed from the site and taken to Pit 9 on the Hanford Site for bioremediation.

**4.213.3 Verification Sampling**

Following visual and field screening, no contamination above CULs was observed in the excavation. In September 1999, five verification composite samples were collected and analyzed to confirm that CULs had been met. Eleven samples were also collected and analyzed from the soil placed in the bioremediation area.

**4.213.4 Statement of Protectiveness**

A letter from RL declaring completion of corrective action was sent to Ecology in March 2004. A response to RL from Ecology was received in May 2004, stating they agreed the cleanup action was completed. The 300-223 waste site has been reclassified to a status of “Closed Out.”

**4.214 300-224, WATS AND U-BEARING PIPING TRENCH****4.214.1 History**

The 300-224 WATS trench ran between the 313 Building, the 303-F Building, the 311 Tank Farm, the 333 Building, the 334 A Building, and the 334 Tank Farm.

**4.214.2 Excavation Operations**

Remediation of the 300-219 and 300-224 waste sites was performed from December 14, 2009, through May 23, 2011. The majority of the soil within the waste sites' footprint was excavated to a depth of 0.5 to 1 m (1.6 to 3.3 ft) bgs. The soil under the 300-224 loading area was excavated to a depth of over 1.5 m (4.9 ft) bgs. The resulting 541 BCM (708 BCY) of soil was disposed at ERDF.

**4.214.3 Verification Sampling**

Verification sampling for the 300-219, 300-224, and 333 WSTF waste sites was conducted August 25, 2011. A focused sampling design was selected for the 300-219, 300-224, and 333 WSTF waste sites based primarily on endpoints and intersections of the pipelines. Seventeen verification focused samples were collected from the 300-219, 300-224, and 333 WSTF waste site excavation.

**4.214.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed at ERDF. The remaining soil at the 300-224 waste site excavated areas has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land use scenario and poses no threat to groundwater or the Columbia River. The 300-224 waste site was reclassified to a status of "Final Closed Out."

**4.215 300-225, 3790 BUILDING STORMWATER RUNOFF, MISCELLANEOUS STREAM #767**

The 300-225 site was a french drain located at the bottom of a stairwell covered with a corrugated metal roof. The french drain received stormwater near the 3790 Building. The site has a "Not Accepted" classification status.

**4.216 300-226, 3709A BUILDING MISCELLANEOUS STREAM #768, DRIP STATION U39**

The 300-226 site was an injection well that received steam condensate, located off the southwest corner of the 3709A Building. When the site was active, the flow rate was less than 0.038 L/min

(0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-226 site has been reclassified to “Rejected.”

**4.217 300-227, 3709A BUILDING MISCELLANEOUS STREAM #769,  
DRIP STATION U38**

The 300-227 site was an injection well that received steam condensate located off the northwest corner of the 3709A Building. When the site was active the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-227 site has been reclassified to “Rejected.”

**4.218 300-228, MISCELLANEOUS STREAM #770, DRIP STATION U28,  
STEAM TRAP 3G-U28, HPD-TRP-026**

The 300-228 site was a french drain that received steam condensate located west/northwest of the northwest corner of the 3760 Building. When the site was active the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-228 site has been reclassified to “Rejected.”

**4.219 300-230, STEAM TRAP 3G-U44, HPD-TRP-29, U44, MISCELLANEOUS  
STREAM #771**

The 300-230 site was a valve pit located near the southeast corner of the 3746 Building. The interior of the pit contained valves, which released steam condensate to the floor. When the site was active, the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-230 site has been reclassified to “Rejected.”

**4.220 300-231, VITRIFICATION TEST SITE TRANSFORMER PAD, SUBSTATION C3-S15**

The 300-231 waste site was a transformer station connected to a 13.8kVA overhead powerline, located in the southeast corner of the 300 Vitrification Test Site. The 300-231 site was reclassified to “Consolidated” and was addressed with the 300 VTS waste site.

**4.221 300-235, 3713 BUILDING STORMWATER RUNOFF AND STEAM CONDENSATE, MISCELLANEOUS STREAM #766**

The 300-235 site was a french drain that received stormwater and steam condensate located approximately 9 m (29.5 ft) northeast of the northwest corner of the 3713 Building. When the site was active the flow rate was less than 3.8 L/min (1 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-235 site has been reclassified to “Rejected.”

**4.222 300-236, STEAM TRAP 3G-U45, HPD-TRP-020, U-45, MISCELLANEOUS STREAM #772**

The 300-236 site was a valve pit that received steam condensate located near the southeast corner of the 3719 Building. When the site was active the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-236 site has been reclassified to “Rejected.”

**4.223 300-237, STEAM TRAP HPD-TRP-010, MISCELLANEOUS STREAM #773**

The 300-237 site was a valve pit that received steam condensate located near the southeast corner of the 303C Building. When the site was active the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-237 site has been reclassified to “Rejected.”



**4.224 300-238, STEAM TRAP 3G-U24, HPD-TRP-016, U-24, MISCELLANEOUS  
STREAM #774**

The 300-238 site was a valve pit that received steam condensate located near the southwest corner of the 305 Building. When the site was active the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-238 site has been reclassified to “Rejected.”

**4.225 300-239, STEAM TRAP 3G-U26, HPD-TPR-058, U26, MISCELLANEOUS  
STREAM #775**

The 300-239 site was a french drain that received steam condensate located near the south side of the 3762 Building, at the bottom of the access ramp. When the site was active the flow rate was less than 0.038 L/min (0.01 gal/min). Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. The steam was superheated before distribution to facilities for heating and process use. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The 300-239 site has been reclassified to “Rejected.”

**4.226 300-240, 314 BUILDING STORMWATER DRAIN, MISCELLANEOUS  
STREAM #789**

The 300-340 site was a french drain that received stormwater located approximately 17 m (56 ft) west of the northeast corner of the 314 Building. The site has a “Not Accepted” classification status.

**4.227 300-241, 320 BUILDING IRRIGATION LINE EFFLUENT, MISCELLANEOUS  
STREAM #790**

The 300-241 site was a sprinkler valve pit, with a water valve inside located on the south side of the 320 Building. The lawn surrounding the 320 Building had underground sprinklers. The water valve was used to operate the system. When active the site received less than 0.038 L/min (0.01 gal/min) of effluent from irrigation. The site has a “Not Accepted” classification status.

**4.228 300-242, 325 BUILDING STORMWATER RUNOFF, MISCELLANEOUS STREAM #791**

The 300-242 site was a sprinkler valve pit, with a water valve inside located on the southwest side of the 320 Building. The lawn surrounding the 320 Building had underground sprinklers. The water valve was used to operate the system. When active the site received less than 0.038 L/min (0.01 gal/min) of effluent from irrigation. The site has a “Not Accepted” classification status.

**4.229 300-243, 318 BUILDING STORMWATER RUNOFF, MISCELLANEOUS STREAM #792**

The 300-243 site is a french drain that consists of a rectangular grate in the pavement located on the north side of the 318 Building in the asphalted driveway. The drain receives stormwater runoff from the 318 Building. The site receives less than 0.038 L/min (0.01 gal/min) of stormwater only. The 300-243 site currently active and has a “Not Accepted” classification status.

**4.230 300-244, 318 BUILDING STORMWATER RUNOFF, MISCELLANEOUS STREAM #793**

The 300-244 site is a horizontal, metal culvert that protrudes from the ground in a gravel depression located on the east side of the 318 Building. The pipe runs under the asphalt driveway, westward toward the 318 Building. The culvert receives stormwater runoff near the 318 Building. The site receives less than 0.038 L/min (0.01 gal/min) of stormwater only. The 300-244 site currently active and has a “Not Accepted” classification status.

**4.231 300-248, 340B STEAM CONDENSATE SUMP PIT**

The 300-248 site was a sump that collected condensate from process stream inside the 340B Building near the southeast corner. The sump structure was located inside a radiologically controlled area. The steam was used to decontaminate rail cars at the 340B Building. The steam condensate sump collected condensate from the process steam. The contaminated solution that resulted from steam cleaning the railcars was flushed into a different drain that led to the Process Sewer. The 300-248 site has been reclassified to “Rejected.”

**4.232 300-249, 304 BUILDING, RESIDUAL RAD CONTAMINATION****4.232.1 History**

The 300-249, 304 Building, Residual Rad Contamination waste site consisted of the residual uranium contamination at the 304 Building that was not closed out as part of the 304 Concretion Facility. The 300-249 waste site was the residual radioactive contamination on the concrete slab at the location of the former 304 Building, which was demolished in 2006. The concrete slab was removed in 2010.

**4.232.2 Excavation Operations**

The demolition of the 303A, 304, 304A, 303B, 3732, 303C, 3707D, and 303E Building foundations began on June 1, 2010, and was completed by June 24, 2010. The 300-28, 300-43, 300-48, 300-249, and 300-16:3 excavation of building foundations, associated pipelines, and soils began on June 28 and was completed by July 29, 2010. Due to elevated radiologically contaminated soil found north of 303E Building, additional remediation was performed September 30, 2010, targeting specific locations with elevated readings. The excavation of the 300-28, 300-43, 300-48, 300-249, and 300-16:3 waste sites resulted in a total of approximately 2,914 BCM (3,811 BCY) of contaminated soil and debris. All material was direct loaded for disposal at ERDF.

**4.232.3 Verification Sampling**

The 300-28, 300-43, 300-48, 300-249, and 300-16:3 waste sites consisted of excavation footprint area for verification sampling. Statistical sampling design was applied to the excavation footprint. Twelve statistical soil samples were collected on the grid within the excavation footprint. Focused sample data was also used as a component of site closeout. The excavation surveyed on March 9, 2011, confirmed that waste site excavation was complete. The screening discovered low levels of radiation north and south of the former location of the 303E Building. Elevated readings (above background levels) were detected, and focused samples were taken from the five locations with elevated readings. The five locations represent the areas within the waste site excavation that have remaining beta contamination greater than 413 cpm and gamma contamination greater than 1,230 cpm in the final GPERS data.

**4.232.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed at ERDF. The remaining soil at the 300-249 waste site excavated areas has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land use scenario and poses no threat to groundwater or the Columbia River. The 300-249 waste site was reclassified to a status of "Final Closed Out."

**4.233 300-250, VALVE PIT SOUTHEAST OF 303A**

The 300-250 site was a valve pit for a sanitary water line, located on the southeast side of the 303A Building. The site was associated with the sanitary water distribution system. There is no process history associated with the 300-250 waste site. According to a historical drawing, the 300-250 valve pit is associated with an abandoned water line. The site has a “Not Accepted” classification status.

**4.234 300-251, UNPLANNED RELEASE OUTSIDE THE 303-K BUILDING****4.234.1 History**

The 300-251, Unplanned Release Outside the 303-K Building waste site was located on the north side of Ginko Street between the former 313 and 314 Buildings. The waste site consisted of potentially contaminated soil around and under the former 303-K Contaminated Waste Storage Building.

**4.234.2 Excavation Operations**

Initial remediation of the waste site was performed June 21 to 22, 2010. The waste site was excavated to a depth of 0.5 m (1.6 ft) bgs, resulting in approximately 432 BCM (565 BCY) of soil disposed at ERDF. Concrete and asphalt were also found within the excavation and were removed for disposal. All material was direct loaded from the excavation; therefore, no waste staging piles were created. No overburden soil stockpiles were associated with the waste site.

A post-excavation radiological survey for gamma and beta activity was conducted following the completion of remedial action to confirm that waste site excavation was complete. No elevated gamma activity was detected. The radiological field screening survey identified two locations with elevated beta activity, with one judged to be potentially above CULs. This location was on the southeast margin of the excavation. Additional soil from the southeast location (approximately 8 BCM [10.5 BCY]) was removed by hand shoveling and was disposed at ERDF. A focused sample was collected from each of the two locations exhibiting elevated beta activity. Supplementary remedial action at the 300-251 waste site occurred on June 1, 2011. Approximately 42 BCM (55 BCY) of soil was removed for disposal to ERDF. The supplementary remedial action was due to a TPH result greater than direct exposure RAGs for a verification soil sample taken at one location.

**4.234.3 Verification Sampling**

Verification sampling for the 300-251 waste site was conducted February 2, June 1, and July 19, 2011. The excavation footprint was the only decision unit identified for the 300-251 waste site for verification sampling. Twelve statistical soil samples were collected on the grid within the excavation footprint at the site. In addition to performing statistical sampling

of the excavation, two focused soil samples were collected from the locations exhibiting elevated beta activity.

#### **4.234.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed at ERDF. The remaining soil at the 300-251 waste site excavated areas has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land use scenario and poses no threat to groundwater or the Columbia River. The 300-251 waste site was reclassified to a status of “Final Closed Out.”

#### **4.235 300-253, UNPLANNED RELEASE OUTSIDE THE 303-K BUILDING**

The 300-253 waste site was the original brine pit for the 384 powerhouse. Brine was used to regenerate ion exchange demineralization in the water softeners. The brine pit was within 0.6 m (2 ft) of the 384 Powerhouse foundation. The site was reclassified to “No Action” in 1999. However, the waste site did not meet the criteria for unrestricted land use identified in the 300 Area Final Action ROD (EPA 2013); therefore, institutional controls to maintain industrial land use at the site are required. The 300-253 waste site was reclassified to a status of “Final Closed Out.”

#### **4.236 300-255, 309 TANK FARM CONTAMINATED SOIL**

##### **4.236.1 History**

The 300-255 waste site was an area of contaminated soil located inside the 309 Building Tank Farm fenced area. The source of contamination was speculated to be leakage of the piping related to the 309-TW-1, 309-TW-2, and 309-TW-3 tanks.

##### **4.236.2 Excavation Operations**

Remediation of the 300-22, 300-255, and UPR-300-5 waste sites, along with the demolition of the 309 PRTR containment structure, was performed from March 12, 2014, to February 12, 2015. The excavation resulted in removal of approximately 78,120 BCM (102,177 BCY) of contaminated materials. All material was direct loaded for disposal at ERDF. The 300-22, 300-255, and UPR-300-5 waste sites were excavated to a depth of 11 m (36 ft) bgs. Excavated materials consisted of soil, gravel, concrete, piping, and other demolition debris. No overburden soil was salvaged from the waste site excavation and no staging pile areas were utilized.

**4.236.3 Verification Sampling**

Verification sampling within the 300-22, 300-255, and UPR-300-5 waste sites was performed on April 23 and 27, 2015. The two deep zone and two shallow zone areas of the 300-22, 300-255, and UPR-300-5 waste sites used a random-start systematic grid for verification soil sampling. Twelve statistical soil samples were collected from each of the four decision units.

**4.236.4 Statement of Protectiveness**

The contaminated materials from these sites have been excavated and disposed of at ERDF. The remaining soil at the 300-22, 300-255, and UPR-300-5 waste sites has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the residential land use scenario and poses no threat to groundwater or the Columbia River. Although the 300-22, 300-255, and UPR-300-5 waste sites are in the industrial portion of the 300 Area, the current site conditions achieve the residential land use CULs and RAOs established by the 300 Area ROD. The results of verification sampling show that residual contaminant concentrations meet human health direct exposure CULs for residential land use and applicable standards for groundwater and river protection in the shallow zone (i.e., surface to 4.6 m [15 ft] deep). These sites meet the requirements for unlimited use and unrestricted exposure; institutional controls to maintain industrial land use are not required. The 300-22, 300-255, and UPR-300-5 waste sites were verified to be remediated in accordance with the 300 Area ROD and were reclassified to a status of “Final Closed Out.”

**4.237 300-256, 306E FABRICATION AND TESTING LABORATORY RELEASES****4.237.1 History**

The 300-256, 306E Fabrication and Testing Laboratory Releases waste site was described as the contaminated soil under and around the 306E Building. In 1976, the valve pit, process waste sump, sewer manholes, and the inlet box to the process sewer leaching trenches were inspected after several hundred gallons of slightly enriched uranyl nitrate hexahydrate solution were spilled into the sump. The investigation found that much uranium and thorium contamination occurred in and beneath the 306E/W Building floor, slab, pipe trenches, and sewer lines. No significant accumulation was found in the lime pit and sewer manholes.

**4.237.2 Excavation Operations**

Remediation of the combined 300-33, 300-256, and 300-41 waste sites occurred between July 10 and November 9, 2009. The remediation activities included the removal of the neutralization tank, valve pit, soil, and other debris within the footprint of the 306E/W Building and partial removal and backfill of the 306E Building assembly pit. During the excavation phase, contaminated soil and debris were removed from the 300-33, 300-256, and 300-41 waste sites excavation area to a depth of 1.5 m (4.5 ft) bgs. All debris and excavation materials have been removed to ERDF.

**4.237.3 Verification Sampling**

Verification sampling for the 300-33, 300-256, and 300-41 waste sites was performed on May 6, 2010. The excavation footprint was the only decision unit identified for the combined 300-33, 300-256, and 300-41 waste sites. Twelve statistical soil samples were collected on the grid within the remediation footprint at the site.

**4.237.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed at ERDF. The remaining soil at the 300-256 waste site excavated areas has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the residential land use scenario and poses no threat to groundwater or the Columbia River. The 300-256 waste site was reclassified to a status of “Final Closed Out.”

**4.238 300-257, 309 PROCESS SEWER TO RIVER****4.238.1 History**

The 300-257 waste site consisted of process sewer piping that was originally connected to the 309 Building Rupture Loop Holding Tank (307-D Tank) and extended to the Columbia River bank. The tank was removed in the late 1970s and all connections to the 300 RLWS were severed and plugged. Streams from the 309 Building after the late 1970s included cooling water from air-conditioning chillers and floor drains from the south basement service area. The piping fed into a 91-cm (36-in.) corrugated steel pipe that flowed to the river.

**4.238.2 Sampling Activities**

Characterization sampling for the 300-257 waste site was conducted February 19 and March 7, 2013. Five focused sediment samples were collected for characterization sampling.

**4.238.3 Statement of Protectiveness**

Characterization sampling results and site-specific modeling show that the site meets the CULs for direct exposure, groundwater protection, and river protection and support an industrial land use scenario. Because the sample results do not meet the CULs for residential land use, the waste site requires institutional controls to maintain industrial land use. The 300-257 waste site was reclassified to a status of “Final Closed Out.”

**4.239 300-258, ABANDONED PIPE TRENCH BETWEEN 334 TANK FARM AND 306E****4.239.1 History**

The 300-258 waste site was a concrete pipe trench between the 306E Development Fabrication Test Laboratory and the 334 Tank Farm facilities and was partially included in the 618-1 Burial Ground footprint. The pipe trench was in use from 1960 to 1975 and contained acid transfer pipes between the 333 Fuels Manufacturing Facility, 334 Tank Farm, and the 306E chemical processing bay, which was located in the northeast corner of the facility. All of these facilities have been removed.

**4.239.2 Excavation Operations**

The northern portion of the 300-258 pipe trench was removed during remediation of the 618-1 Burial Ground, which occurred between September 17, 2008, and September 10, 2009.

A layer of fill material was placed over the southern portion of the 300-258 pipe trench and the area was used as a haul road during remedial actions at the 618-1 Burial Ground. On August 6, 2009, the field remediation crew exposed the remaining southern portion of the concrete pipe trench to collect in-process samples at two locations. After in-process samples were taken, the southern portion of the pipe trench consisting of 288 BCM (377 BCY) of soil and debris were removed and sent to ERDF. The excavation was backfilled for continued use of the haul road.

**4.239.3 Verification Sampling**

Verification sampling of the southern portion of the 300-258 waste site was conducted June 9, 2011. As part of 618-1 verification sampling activities, extensive samples were taken in this area for the 618-1 waste site closeout. A focused sampling design was selected for the 300-258 waste site. The design consisted of three focused samples collected at locations along the southern part of the trench that was excavated.

**4.239.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed at ERDF. The remaining soil at the 300-258 waste site excavated areas has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the residential land use scenario and poses no threat to groundwater or the Columbia River. The 300-258 waste site was reclassified to a status of "Final Closed Out."



**4.240 300-259, CONTAMINATION AREA SURROUNDING 618-1 BURIAL GROUND****4.240.1 History**

The 300-259 waste site was a Radiological Contamination Area covered with gravel and was posted with light posts and plastic or metal chain located north and east of the 618-1 Burial Ground. In March 1991, partially buried debris was noticed protruding from the ground north of the 618-1 Burial Ground marker posts. Additional areas of soil contamination were identified on the eastern side of the 618-1 Burial Ground markers. The debris was removed and placed in a disposal container. In June 1991, an area of contaminated soil was found near the southeastern corner of the burial ground, outside the 618-1 concrete markers.

**4.240.2 Excavation Operations**

Remediation of the 300-259 waste site was performed from March 18 through May 18, 2009. The soil within the waste site footprint was excavated to a depth of 1 m (3 ft) bgs. Approximately 6,600 metric tons (7,300 US tons) of debris and soil were removed and disposed of at ERDF.

**4.240.3 Verification Sampling**

Verification sampling for the 300-259 waste site was performed on October 19, 2009. A statistical sampling design was the preferred verification sampling approach for this site because the distribution of potential residual soil contamination over the site was uncertain. Twelve statistical soil samples were collected on the grid within the remediation footprint at the site.

**4.240.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed at ERDF. The remaining soil at the 300-259 waste site excavated areas has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the residential land-use scenario and poses no threat to groundwater or the Columbia River. The 300-259 waste site was reclassified to a status of "Final Closed Out."

**4.241 300-260, CONTAMINATED SOIL WEST OF 313 BUILDING****4.241.1 History**

The 300-260 waste site was an area of formerly contaminated soil west of the former 313 Building. The site was not radiologically posted but surrounded by light posts and yellow rope with no signs of any kind present. In addition, a small amount of equipment and large wooden boxes were described as being stored inside the roped area. In 1988, soil samples were collected from the waste site area, exceeded regulatory limits for lead and barium. It was

determined that prior to the areas being covered with asphalt, it was possible that “slag” may have been temporarily stockpiled in this area, before being sent to a burial ground. Small pieces of slag may have been left on the ground.

#### **4.241.2 Excavation Operations**

Excavation activities occurred in this area in 1994 during electrical utility upgrades inside the 300 Area. Radioactively contaminated black chunks of material were found in some of the holes dug in this area. An underground utility trench was also dug in 1994 in an east-west direction across the northern edge of the area that was delineated by yellow rope. A count rate of 120,000 dpm beta/gamma was identified in the trench. A chunk of black material excavated from a hole approximately 1.2 m (4 ft) deep read 25,000 dpm beta/gamma and 7,500 dpm alpha. The excavation removed a concrete pad for an electrical vault along with incidental soil. Approximately 1,278 metric tons (1,672 US tons) of material was excavated and disposed of at ERDF.

#### **4.241.3 Verification Sampling**

Samples taken during excavation of a concrete pad at the 300-260 waste site were collected on June 2 and June 3, 2010. Two composite samples were collected at each of eight test trenches, one composite sample from 0 to 0.5 m (0 to 1.6 ft) bgs and the other composite sample from 0.5 to 1 m (1.6 to 3.28 ft) bgs. Each composite sample consisted of either three or four discrete soil samples. Four discrete soil samples were collected per composite sample for trenches 1 to 4 and three discrete soil samples were collected per composite sample for trenches 5 to 8.

#### **4.241.4 Statement of Protectiveness**

The remaining soil at the 300-260 waste site has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the residential land use scenario and poses no threat to groundwater or the Columbia River. The 300-260 waste site was reclassified to a status of “Final No Action.”

### **4.242 300-261, 315 FILTER PLANT PROCESS SEWER TO RIVER**

The 300-261 site was a sewer constructed of a vitrified clay pipe from the building to the river bank. The sewer conveyer water from the 315 basin overflow drains and the 315 filter backwash water to the river. Treatment chemicals included alum (aluminum sulfate), chlorine, and separan (a polyacrylamide-flocculent). The site also received stormwater. The effluent pipe inside the diversion box near the 315 Building was blanked off with plywood and filled in with concrete. The 300-261 site sewer drain was sealed shut with grout. The site has been reclassified to “Rejected.”

**4.243 300-262, CONTAMINATED SOIL WEST OF SOUTH PROCESS POND****4.243.1 History**

The 300-262 site consisted of contaminated soil located to the west of the 316-1 South Process Pond, discovered during excavation activities for pipeline utility work. The contaminated soil was suspected to be scrapings from the 316-1 South Process Pond. The 300-262 site was remediated with the 316-1 South Process Pond.

**4.243.2 Excavation Operations**

Remediation activities at the 316-1 South Process Pond began in 1997 with excavation of trenches at locations around the periphery of the 316-1 site. Trenching was performed to assess the lateral extent of contamination. The majority of remedial excavation and disposal activities were conducted in 1999 and 2000. Excavation at the site involved removing the overburden (scraped surface) soils and contaminated soils transported to ERDF for disposal. The excavation depth was approximately 5.7 m (19 ft). Approximately 234,000 metric tons (257,000 tons) of material from the site were disposed at ERDF.

**4.243.3 Verification Sampling**

Verification sample locations were determined by a random number generator. A total of 37 discrete cleanup verification soil samples were collected from the excavation area. A total of 19 and 10 cleanup verification samples were collected from the overburden and staging pile areas, respectively.

**4.243.4 Statement of Protectiveness**

The remaining soil at the 300-262 waste site excavated areas has been sampled, analyzed, and evaluated. The waste site does not meet the criteria for unrestricted land use. Therefore, institutional controls to maintain industrial land use at the site are required. The 300-257 waste site was reclassified to a status of "Final Closed Out."

**4.244 300-263, 324 BUILDING DIVERSION TANK****4.244.1 History**

The 300-263 waste site was an inactive catch tank originally intended to receive process solutions that were too radiologically contaminated to send directly for ground disposal in the 307 Trenches (316-3 waste site) without additional treatment. Shortly after the tank was installed, the 340 Complex came online. At that time, the piping system to the diversion tank in the 324 yard was bypassed and capped. Since that time the 324 Building effluent was transferred to the 340 Complex. Three supporting caissons (i.e., valving, pump, and ion exchange) were ancillary to the catch tank.

**4.244.2 Excavation Operations**

The 300-263 waste site is located within the 316-3 waste site boundaries. Remediation of the 300-263 waste site began on September 24, 2014. During the 300-263 waste site remediation, contamination associated with the 316-3 waste site was discovered. The 316-3 waste site was previously reclassified as “Interim No Action” based on site characterization data results. This reclassification was rendered void when 316-3 waste site contamination was discovered during remediation of the 300-263 waste site. Approximately 69,834 BCM (91,339 BCY) of excavated materials were removed from the 300-263 and 316-3 waste sites and direct loaded for disposal at ERDF. The maximum depth of the 300-263 and 316-3 waste sites combined excavation was approximately 11.3 m (37 ft) bgs on the west end, and approximately 9.8 m (32 ft) bgs at the center and east end of the excavation. Excavated materials consisted of radiologically contaminated soil, gravel, coal ash, and limited debris associated with deactivated underground utilities. No overburden soil was salvaged from the waste site excavation and no staging pile areas were utilized.

**4.244.3 Verification Sampling**

Verification sampling within the 300-263 and 316-3 waste site excavation was performed on May 14, 2015. Two decision units were identified for the two waste sites: the deep zone excavation footprint and the shallow zone excavation footprint. Twelve statistical verification soil samples were collected from each of these decision units.

**4.244.4 Statement of Protectiveness**

The contaminated materials from this waste site has been excavated and disposed of at ERDF. The remaining soil at the 300-263 waste site has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land use scenario and poses no threat to groundwater or the Columbia River. Because this waste site was remediated to achieve CULs for industrial land use; institutional controls to maintain industrial land use are required. The 300-263 waste site was reclassified to a status of “Final Closed Out.”

**4.245 300-264, 327 BUILDING, POST-IRRADIATION TESTING LABORATORY (PTL)**

The 300-264 waste site consisted of the former 327 Building. The 327 Building was also known as the Post-irradiation Testing Laboratory. The Post-irradiation Testing Laboratory consisted of specially equipped, shielded, and ventilated Hot Cells and laboratories designed for physical and metallurgical examination and testing of irradiated fuels, concentrated fission products, and irradiated structural materials. The 327 Building was demolished and residual soil contamination was removed. The 300-264 waste site has been reclassified to “Rejected.”

**4.246 300-266, SOIL UNDER 3728 BUILDING DRAIN PIPE**

The 300-266 waste site consisted of soil below a black 5-cm (2-in.) plastic drain pipe, located on the southwest corner of the 3728 Building. The drain pipe was connected to a sink where containers were filled with de-ionized water. The 300-266 drain pipe was removed during demolition of the 3728 Building. The site has been reclassified to “Rejected.”

**4.247 300-267, FRENCH DRAIN ON NORTHEAST CORNER OF 3728 BUILDING, MISCELLANEOUS STREAM #829**

The 300-267 site was a french drain that consisted of a concrete slab with a square pit at the end. The french drain received water from the HVAC system for the 3728 Building. The site has been reclassified to “Rejected.”

**4.248 300-268, 3741 BUILDING FOUNDATION; SPECIAL MACHINE SHOP; BOX STORAGE BUILDING FOUNDATION****4.248.1 History**

The 300-268, 3741 Building Foundation waste site was the foundation for the 3741 Building, also known as the Special Machine Shop or the Box Storage Building. The building was torn down in 1955 or 1956, and the area was used to expand the adjacent coal storage pile.

**4.248.2 Excavation Operations**

Remedial action at the 300-268 and associated waste sites (i.e., 300-123, 300-6, 300-273, and UPR-300-42) was performed from August 2 to December 8, 2010. The 300-6 and associated waste sites were excavated to a maximum depth of approximately 15 m (49.5 ft). Remediation of the 300-6 and associated waste sites resulted in approximately 34,770 BCM (45,477 BCY) of material removed for disposal at ERDF.

**4.248.3 Verification Sampling**

Verification sampling for the 300-268 and associated waste sites was conducted August 24, 2011. Excavation of the 300-268 waste site extended to the water table; therefore, the vadose zone source of groundwater contamination has been removed to mitigate current and future impacts. The sample design for the 300-6 and associated waste sites consisted of a single decision unit for verification sampling. The sample design included 12 statistical samples and a single focus sample at the east borehole location. The verification sampling area was limited to the floor of the excavation, where there was the greatest potential for residual contamination. The upper boundary of the sampling area was based on the civil survey performed for the excavation; and was represented by the topographical line at the 111.5-m (365.8-ft) elevation mark. This sampling area stratum extended approximately 2 m (6.6 ft) beyond the eastern

portion of the 300-6 waste site WIDS boundary and wrapped around the groundwater pool. Only surface contamination was expected at the 300-268 waste site as process knowledge indicated only dry processes were conducted in the 3741 Building. Therefore, the 300-268 waste site was included in the statistical sampling area.

#### **4.248.4 Statement of Protectiveness**

Remedial actions were performed to support future industrial land use and to protect groundwater and the Columbia River. Further, the achieved residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 m [15 ft] deep). The site extended into the deep zone (greater than 4.6 m [15 ft] deep); however, the site was closed out using the shallow zone direct exposure, groundwater, and river protection cleanup criteria. Results indicate that the site supports future land uses that can be represented (or bounded) by the residential land use scenario and poses no threat to groundwater or the Columbia River. The 300-268 waste site has been reclassified to a status of “Final Closed Out.”

### **4.249 300-270, UNPLANNED RELEASE AT 313 BUILDING**

#### **4.249.1 History**

The 300-270 waste site was an unplanned release of a milky-white flow of water that came out of a pipe located below the loading dock on the east side of the 313 Building. The dock was used by Richland Specialty Extrusions to store cylinders of metal (e.g., aluminum). The pipe drained stormwater from the roof of the 313 Building. The release was on the surface of the ground, in an area of compacted gravel and soil.

#### **4.249.2 Excavation Operations**

Remediation of the 300-270 waste site was performed May 23, 2011. The soil within the waste site footprint was excavated to a depth of 0.5 m (1.6 ft) bgs, and the resulting 40 BCM (52 BCY) of soil was disposed at ERDF.

#### **4.249.3 Verification Sampling**

Verification sampling for the combined UPR-300-38, 313 ESSP, and 300-270 waste sites was conducted on December 16 and 19, 2011, and January 26, 2012. A statistical sampling approach was utilized for the combined UPR-300-38, 313 ESSP, and 300-270 waste sites excavation. The footprint of the UPR-300-38, 313 ESSP, and 300-270 waste sites excavated area was used as the basis for locations of 12 soil samples collected from the excavation footprint.

**4.249.4 Statement of Protectiveness**

The contaminated materials from 300-270 waste site has been excavated and disposed of at ERDF. The remaining soil at the 300-270 waste sites has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land use scenario and poses no threat to groundwater or the Columbia River. Because this waste site was remediated to achieve CULs for industrial land use, institutional controls to maintain industrial land use are required. The 300-270 waste site was reclassified to a status of “Final Closed Out.”

**4.250 300-271, 324/327 BUILDINGS 90 DAY STORAGE PAD, HS-027**

The 300-271 waste site was kept in a Conex box commercially manufactured for storing wastes. The box had a spill containment system in that the waste was stored on a grate at the level of the door threshold, and any spills would be contained under the grate so they could not spill out the door. All dangerous wastes and waste residues were removed. There were no spills at this pad and the site has been reclassified to “Rejected.”

**4.251 300-272, UNDERGROUND STORAGE TANK NEAR THE 377 BUILDING****4.251.1 History**

The 300-272 site was a 11,355-L (3,000-gal) UST in a gravel field that served as a gasoline fueling station until the 1960s. The dispensing pump was removed prior to 1968.

**4.251.2 Excavation Operations**

A total of 11,355 L (3,000 gal) of liquid were removed from the tank. The liquid removed from the tank consisted of water with impurities. Excavation of the soil surrounding the UST, the pipe connecting the tank to the dispensing pump, and the concrete pad used to support the dispensing pump was completed in mid-January 2002. Removal of these components was then completed by January 25, 2002.

**4.251.3 Sampling**

A total of 37 samples were collected and analyzed for total petroleum hydrocarbons in both the diesel fuel and gasoline ranges. The samples were collected from areas where contamination was most likely to have occurred (i.e., beneath the tank, below the bottom of the connecting pipe and below the bottom of the concrete pad used to support the gasoline dispensing pump). No evidence of leaking or failure of the connecting pipe or the tank was observed. The excavated soil was used to backfill the site. The tank and piping was recycled, and the concrete was sent to the Pit 9 demolition landfill.

**4.251.4 Statement of Protectiveness**

The materials from 300-272 waste site has been excavated and disposed of appropriately. The remaining soil at the 300-272 waste site has been sampled, analyzed, and evaluated. The 300-272 waste site has been reclassified to Closed Out.

**4.252 300-273, FUEL OIL TRANSFER PIPELINE, 366 BUNKER PIPELINE****4.252.1 History**

The 300-273, Fuel Oil Transfer Pipeline waste site was an encased, underground pipeline, which transferred fuel oil from the 366 Fuel Oil Bunkers to the underground fuel oil day tanks. The pipeline operated from 1964 to 1998. The 300-273 waste site was removed during the excavation to remove the 384 Building below-grade structures during 2009 and 2010. The pipeline was confirmed to have been removed during the 300-6 waste site remediation activities.

**4.252.2 Excavation Operations**

Remedial action at the 300-273 and associated waste sites (i.e., 300-123, 300-268, 300-6, and UPR-300-42) was performed from August 2 to December 8, 2010. The 300-273 and associated waste sites were excavated to a maximum depth of approximately 15 m (49.5 ft). Remediation of the 300-273 and associated waste sites resulted in approximately 34,770 BCM (45,477 BCY) of material removed for disposal at ERDF in the 200 Area of the Hanford Site.

**4.252.3 Verification Sampling**

Verification sampling for the 300-273 and associated waste sites was conducted August 24, 2011. Excavation of the 300-273 waste site extended to the water table; therefore, the vadose zone source of groundwater contamination has been removed to mitigate current and future impacts. The sample design for the 300-6 and associated waste sites consisted of a single decision unit for verification sampling. The sample design included twelve statistical samples and a single focus sample at the east borehole location. The verification sampling area was limited to the floor of the excavation, where there was the greatest potential for residual contamination. The upper boundary of the sampling area was based on the civil survey performed for the excavation; and was represented by the topographical line at the 111.5 m (365.8-ft) elevation mark. This sampling area stratum extended approximately 2 m (6.6 ft) beyond the eastern portion of the 300-273 waste site WIDS boundary and wrapped around the groundwater pool.

**4.252.4 Statement of Protectiveness**

Remedial actions were performed to support future industrial land use and to protect groundwater and the Columbia River. Further, the achieved residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for



unrestricted use of shallow zone soils (i.e., surface to 4.6 m [15 ft] deep). The site extended into the deep zone (greater than 4.6 m [15 ft] deep); however, the site was closed out using the shallow zone direct exposure, groundwater, and river protection cleanup criteria. Results indicate that the site supports future land uses that can be represented (or bounded) by the residential land use scenario and poses no threat to groundwater or the Columbia River. The 300-273 waste site has been reclassified to a status of “Final Closed Out.”

#### **4.253 300-274, SURFACE DEBRIS**

##### **4.253.1 History**

Various forms and sizes of potentially hazardous or dangerous surface debris waste was created during 300 Area construction and operation and during decommissioning and remedial action activities. The 300-274 waste site was divided into three distinct groups for ease of remedial action planning and execution. The three groups were surface debris areas (Area 1), a glass bottle location (Area 2), and a PCB stained soil area (Area 3).

##### **4.253.2 Excavation Operations**

The remediation of the Area 1 was accomplished by hand pick-up and removal of surface debris. Materials removed were disposed at ERDF. Remedial action at Area 2 consisted of removing the glass bottle and approximately 0.03 m<sup>3</sup> (1 ft<sup>3</sup>) of the impacted soil to ERDF. Remedial action at Area 3 consisted of several phases of excavation removing 2,330 BCM (3,050 BCY) to ERDF, culminating in a test pit excavation to groundwater in one area of the site.

##### **4.253.3 Verification Sampling**

The locations of debris in Area 1 were judged to have no potential for hazardous or dangerous constituents in the soil and thus were not investigated further. Verification sampling of Area 2 consisted of one focused soil grab sample collected on October 12, 2009. Verification sampling at Area 3 was conducted in four phases from October 2009 through December 2012.

##### **4.253.4 Statement of Protectiveness**

The contaminated materials from 300-274 waste site has been picked-up, excavated, and disposed of at ERDF. The remaining soil at the 300-274 waste site has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land use scenario and poses no threat to groundwater or the Columbia River. Because 300-274 waste site Area 3 was remediated to achieve CULs for industrial land use, institutional controls to maintain industrial land use are required. The 300-274 waste site has been reclassified to “Final Closed Out.”

**4.254 300-275, POTENTIAL LANDFILL ON RIVER EDGE****4.254.1 History**

The waste site was established based on surface debris identified in two separate areas that were designated as the northern and southern regions of the 300-275 waste site. Surface debris identified at both the northern and southern regions of the 300-275 waste site included small fragments of potentially asbestos containing shingles (transite), metal fragments, concrete pieces, porcelain jar fragments, rusted cans, metal fragments, insulated electrical cable, broken glass, pieces of copper tubing, a broken graduated cylinder, and other trash. Based on the location and overall composition of the debris in both regions, the entire site was believed to be related to Hanford Site laboratory work in the 300 Area.

**4.254.2 Excavation Operations**

Handpicking and removal of surface debris from both the northern and southern regions was completed prior to excavation activities. Subsurface debris was excavated and removed from both regions of the 300-275 waste site between July 25, 2007, and August 9, 2007. All of the handpicked surface debris and the excavated debris and associated soils were disposed at ERDF.

**4.254.3 Verification Sampling**

Verification sampling for the 300-275 waste site was performed on November 19 and 20, 2008. The footprints of the northern and southern excavations were the decision units for verification sampling. Twelve statistical soil sample locations were identified in the northern region and ten statistical soil sample locations were identified in the southern region.

**4.254.4 Statement of Protectiveness**

The contaminated materials from 300-275 waste site has been picked-up, excavated, and disposed of at ERDF. The remaining soil at the 300-275 waste site has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the residential land use scenario and poses no threat to groundwater or the Columbia River. Because 300-275 site was remediated to achieve CULs for residential land use, institutional controls to maintain industrial land use are not required. The 300-275 waste site has been reclassified to “Final Closed Out.”

**4.255 300-276, 3607 SANITARY SYSTEM MISCELLANEOUS COMPONENTS,  
300 AREA SANITARY SEWER DISPOSAL SYSTEM, 3607 SANITARY  
SEWER SYSTEM****4.255.1 History**

The 300-276, 3607 Sanitary System Miscellaneous Components waste site, located in the northeast section of the 300 Area, east of the 333 Building, consisted of the surface and subsurface sewer system components of manhole SS6, the influent diversion box, the sludge pumping equipment, the sludge pit, the system's original septic tank, the system's original tile field, and a retention basin and the measuring weir/diversion trenches. A chlorination station was added in 1972. The foundation for an adjacent liquid chlorine bottle storage facility was also considered part of the 300-276 waste site for remedial action.

**4.255.2 Excavation Operations**

The demolition of the septic tanks, associated equipment, and the liquid chlorine bottle storage facility foundation, as well as loadout of demolished debris and soil, began on November 8, 2010, and was completed February 3, 2011. The debris included concrete, rebar, piping, valves, sand (used for tank fills), and residual sludge. The excavation at the 300-276 waste site resulted in a total of approximately 2,228 BCM (2,914 BCY) of contaminated soil and debris. All material was direct loaded for disposal at ERDF.

**4.255.3 Verification Sampling**

Verification sampling for the 300-276 waste site was conducted on August 23, 2011. A statistical sampling approach was utilized for the 300 276 excavation. Twelve statistical soil samples were identified for the excavation area.

**4.255.4 Statement of Protectiveness**

The contaminated materials from 300-276 waste site has been excavated and disposed of at ERDF. The remaining soil at the 300-276 waste site has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the residential land use scenario and poses no threat to groundwater or the Columbia River. Because 300-276 site was remediated to achieve CULs for residential land use, institutional controls to maintain industrial land use are not required. The 300-276 waste site has been reclassified to "Final Closed Out."

**4.256 300-277, 300 AREA QUEUE CONTAMINATION****4.256.1 History**

The 300-277 waste site encompassed what was recently the 300 Area north container transfer area. The container transfer area was used to weigh, stage, mark, and complete closure of bulk waste transportation containers for shipment and disposal to ERDF. During initial construction of the container transfer area in 2004, radiological contamination was encountered during site grading. Visual inspection of the contaminated area noted soil mixed with debris. A radiological survey of the area found beta/gamma activity at 4,000 cpm. Additional radiological contamination was encountered during a light pole installation in 2006.

**4.256.2 Characterization Sampling**

Characterization soil samples were collected from several test pits excavated at the 300-277 waste site between April and May 2015. The test pits and characterization sampling were conducted to determine the extent of buried debris and to support the remedial action design.

**4.256.3 Excavation Operations**

Remediation of the 300-277 waste site was conducted between May 14 and June 16, 2015. The remediation extended to an approximate maximum depth of 4.5 m (14.8 ft) bgs, resulting in approximately 10,278 BCM (13,443 BCY) of contaminated soil and debris being disposed at ERDF. The debris disposed consisted of soil, metal, brick, ash, and asbestos (transite). No overburden soil was salvaged from the 300-277 waste site excavation and no staging pile areas were utilized.

**4.256.4 Verification Sampling**

Following remedial action activities, verification soil samples were collected from the decontamination pad on July 15, 2015, and from the remediated portion of the 300-277 waste site on July 23, 2015. One decision unit was identified for the 300-277 waste site and consisted of the excavated area. A combination statistical and focused sampling design was used to evaluate the decision unit. Twelve statistical and three focused verification soil samples were collected from the decision unit.

**4.256.5 Statement of Protectiveness**

The contaminated materials from 300-277 waste site has been excavated and disposed of at ERDF. The remaining soil at the 300-277 waste site has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land use scenario and poses no threat to groundwater or the Columbia River. Because 300-277 site was remediated to achieve CULs for industrial land use, institutional

controls to maintain industrial land use are required. The 300-277 waste site has been reclassified to “Final Closed Out.”

#### **4.257 300-279, AUTOMOTIVE REPAIR BUILDING FUEL TANKS**

##### **4.257.1 History**

The 300-279, 3716 Automotive Repair Building Fuel Tanks waste site consisted of the historical location of underground diesel and gasoline storage tanks that were located to the north of the original 313 Building and east of the original 3716 Automotive Repair Building. Prior to confirmatory sampling, it was unknown if fuel (diesel/gasoline) contamination existed from the underground tanks and was present at the site. The 300-279 waste site was located within the UPR-300-38, Soil Contamination Beneath the 313 Building waste site and also included any soil contamination related to fuel oil located under the 313 Building foundation.

##### **4.257.2 Confirmatory Sampling**

Confirmatory sampling of the 300-279 waste site was performed in April 2011. Two trenches were excavated across the location of the suspected fuel tanks on April 4, 2012. Four grab samples per trench were taken along the base of each trench at 3.3 m (10 ft) bgs. These locations correspond to the areas beneath the suspected fuel tanks. No additional debris was observed during sampling, and no sign of soil staining was noted.

##### **4.257.3 Statement of Protectiveness**

The 300-279 waste site confirmatory sampling determined that contaminant concentrations at this site support future residential land use and are protective of groundwater and the Columbia River. Further, the contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils. The results of confirmatory sampling performed at this site indicate that the COC concentrations meet the CULs for direct exposure, groundwater protection, and river protection. Institutional controls to prevent uncontrolled drilling or excavation into the deep zone are not required. The confirmatory sampling results support a reclassification of the 300-279 waste site to “Final No Action.”

#### **4.258 300-280, CONSTRUCTION DEBRIS DISPOSAL PIT WEST OF GEORGE WASHINGTON WAY**

##### **4.258.1 History**

The 300-280 waste site was a disposal pit that was used for construction debris during the construction of the 309 facility in the late 1950s. During confirmatory sampling, debris and potentially hazardous materials consistent with a construction debris disposal pit were observed.

Remedial action was determined to be necessary because confirmatory sampling detected petroleum hydrocarbons and polycyclic aromatic hydrocarbons above direct exposure CULs.

#### **4.258.2 Excavation Operations**

Remediation of the 300-280 waste site was performed between February 2 and 19, 2015. The excavation extended to an approximate maximum depth of 6 m (19.7 ft) bgs, resulting in approximately 9,348 BCM (12,227 BCY) of contaminated soil and debris being removed for disposal at ERDF. No overburden soil was salvaged from the 300-280 waste site excavation and no staging pile areas were utilized.

#### **4.258.3 Verification Sampling**

Verification sampling within the 300-280 waste site excavation was performed on April 7, 2015. One decision unit was identified for the 300-280 waste site. The decision unit is comprised of a combination of statistical and focused verification soil samples. Twelve statistical soil sample locations were identified. In addition to the statistical sample locations, two focused sample locations were identified.

#### **4.258.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed of at ERDF. The remaining soil at the 300-280 waste site has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the residential land use scenario and poses no threat to groundwater or the Columbia River. Because the waste site was remediated to achieve CULs for residential land use, institutional controls to maintain industrial land use are not required. The 300-280 waste site meets the requirements for unlimited use and unrestricted exposure. The 300-280 waste site has been reclassified to a status of “Final Closed Out.”

### **4.259 300-281, SEPTIC TANK NEAR 325 BUILDING**

#### **4.259.1 History**

The 300-281 waste site was originally suspected of having an underground septic tank located about 72 m (236 ft) north of the 3790 Building between the north end of the parking lot and the security fence surrounding the 325 Building.

#### **4.259.2 Confirmatory Sampling**

Two test pits were hand dug as the 300-281 waste site location for confirmatory sampling. Hole #1 was at the location of the cleanout port, and Hole #2 was where the geophysics showed a possible intersection of another pipe and where the suspect septic tank was thought to be located. A test pit was hand excavated to an approximate depth of 1 m (3 ft) where an intact

septic pipeline system was found; however, a septic tank was neither found nor was there any evidence of one having been there in the past. Confirmatory sampling activities confirmed that there was no septic tank at this location.

#### **4.259.3 Statement of Protectiveness**

The confirmatory test pit excavations showed an intact septic pipeline system with no indication that a septic tank had ever existed at this site. Based on this information, the 300-281 waste site has been reclassified to “Final No Action.”

#### **4.260 300-282, CRIB NEAR 3717-B BUILDING**

The 300-282, Crib Near 3717-B Building waste site exact location was unknown. The site dates back to 1944, at which time, temporary autoclaves, a settling tank, and a wooden french drain or crib made up the installation. It appeared that the above ground portion of this installation was removed shortly after it was installed. Other than a few references to the site, very little documentation can be found and none of the features of the 300-282 installation are depicted on the 300 Area construction drawings.

On October 23 and 24, 1950, contaminated timbers and soil were found during excavation for construction of the 3717-B Building. It was believed that the subsurface vertical timbers found were the wooden french drain associated with the 300-282 waste site. Again, the exact location of this site was not well documented. However, the contaminated materials and soils were removed to the west of the where they were added to the 618-13 mound. The only data associated with the 300-282 waste site is a report that the removed material was as much as 50 mrem. Subsequently, the 3717-B Building that the 300-282 waste site is either near or under has been demolished and decommissioned. The 618-13 waste site, where materials from the 300-282 waste site were disposed, has been remediated and final closed out. Based on the best available information it was concluded that the 300-282 waste site was no longer present. Therefore, the 300-282 waste site has been reclassified to “Rejected.”

#### **4.261 300-283, CONTAMINATED LIGHT WATER DISPOSAL SITE #2; POTENTIAL TRENCH LOCATION #2**

##### **4.261.1 History**

The 300-283, Contaminated Light Water Disposal Site #2 waste site was a suspected liquid disposal area associated with the September 29, 1965, contamination event that occurred at the 309 Building.

**4.261.2 Confirmatory Sampling**

Confirmatory sampling for the 300-283 waste site was conducted on April 26, 2012. Focused sampling was selected to characterize the 300-283 waste site based on the historical documents and drawings explaining the contamination event. One test pit was excavated on April 26, 2012. One focused sample and duplicate was taken at the bottom of the test pit at approximately 3.5 m (10.5 ft) bgs. No additional debris was observed during sampling and no sign of soil staining was noted. No asbestos-containing material was identified during field activities, and therefore asbestos analysis was not performed.

**4.261.3 Statement of Protectiveness**

Confirmatory sampling determined that contaminant concentrations at this site support future residential land use and are protective of groundwater and the Columbia River. The contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils. The results of confirmatory sampling performed at this site indicate that the concentrations of COPCs meet the RAGs for direct exposure, groundwater protection, and river protection. Institutional controls to prevent uncontrolled drilling or excavation into the deep zone are not required. In accordance with this evaluation, the 300-283 waste site has been reclassified to “Final No Action.”

**4.262 300-284, SAND BLASTING AREA NEAR 3221 BUILDING****4.262.1 History**

The 300-284 waste site was the historical location of the sandblasting area associated with the former 3221 Building location. The 3221 Building and the associated 300-284 waste site area was used for sandblasting of the surfaces of various items in preparation for painting. The walls and the associated buildings close to the sandblast area have been removed and the associated area had been graded and backfilled with gravel prior to commencement of remedial actions.

**4.262.2 Excavation Operations**

Remediation of the 300-284 waste site, performed on August 17, 2012, consisted of excavation of soil mixed with garnet sand. The excavation reached a depth of approximately 0.9 m (3 ft), resulting in approximately 424 BCM (555 BCY) of contaminated soil being disposed at ERDF.

**4.262.3 Verification Sampling**

Verification sampling within the 300-284 excavation was performed on July 11, 2014. The excavation area footprint is the only decision unit identified for the 300-284 waste site for verification sampling. Twelve soil sample locations were identified.



**4.262.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed of at ERDF. The remaining soil at the 300-284 waste site has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land use scenario and poses no threat to groundwater or the Columbia River. The waste site contamination does not extend into the deep zone soils. Since the waste site was remediated to achieve CULs for an industrial land use, institutional controls are required. The 300-284 waste site has been reclassified to a status of “Final Closed Out.”

**4.263 300-285, 300 AREA STEAM CONDENSATE FRENCH DRAINS/DRY WELLS, TEN FRENCH DRAINS AND DRY WELLS IN 300 AREA**

The 300-285 site consisted of 10 discrete locations and underlying soil of steam condensate french drains/drywells and their associated below grade piping components. The french drains/drywells were discovered as part of the orphan site evaluation process. The french drains are located throughout the 300 Area.

Steam was produced from sanitary water that had been sent through a water softener system to remove minerals. The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Nonregulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. One drywell drained the stairwell landing of the first floor of the 314 Building of rainwater. The site has a “Not Accepted” site classification status.

**4.264 300-286, THREE 300 AREA POTENTIALLY CONTAMINATED FRENCH DRAIN/DRYWELLS****4.264.1 History**

The 300-286 waste site consisted of three individual french drain and drywell locations that were identified during the orphan sites evaluation process. The 300-286 waste site included the underlying soil and the below grade piping components associated with the french drains/drywells. These components were located near the 309 Building exhaust filter pit, 3790 Badge House, and 3701-N Guardhouse.

**4.264.2 Confirmatory Sampling**

Confirmatory sampling was conducted on April 4, 2012. Focused sampling was selected to characterize the 300-286 waste site based on the french drain coordinate locations identified in the historical building drawings. It was determined that Drain #1 would be removed during the 309 Building demolition; therefore, confirmatory sampling at the Drain #1 location was not

performed. Based on the confirmatory sample results from waste sites similar to the 300-286 Drain #2, the drain was not believed to pose a significant risk for direct exposure, groundwater protection, or river protection. Two focused samples were collected from Drain #3 location.

#### **4.264.3 Statement of Protectiveness**

Based on the confirmatory sampling and site evaluation the 300-286 site met the remedial action objectives for direct exposure, groundwater protection, and river protection. The waste site was evaluated using the human health direct exposure CULs for industrial land use and applicable standards for groundwater and river protection in the shallow zone (i.e., surface to 4.6 m [15 ft] deep). The waste site contamination did not extend into the deep zone soils. Institutional controls to maintain industrial land use are required at the 300-286 waste site. In accordance with this evaluation, the 300-286 waste site has been reclassified to “Final Closed Out.”

### **4.265 300-287, TRANSITE DEBRIS WEST OF ROUTE 4 SOUTH**

#### **4.265.1 History**

The 300-287, Transite Debris West of Route 4 South waste site was identified on June 24, 2009, during an orphan sites evaluation walkdown. The debris consisted of broken corrugated transite over an area of approximately 1.5 m (5 ft) by 0.5 m (1.6 ft).

#### **4.265.2 Excavation Operations**

Remediation of the 300-287, Transite Debris West of Route 4 South waste site was performed on October 10, 2014. Four transite pipes measuring 2.4 by 0.7 m (8 by 2.5 ft) were removed and direct loaded for disposal at ERDF.

#### **4.265.3 Verification Sampling**

Visual inspection was performed of the excavated area by a certified asbestos competent person. No evidence of the transite material or other asbestos-related dust or debris remained at the site.

#### **4.265.4 Statement of Protectiveness**

The waste site was remediated to achieve cleanup requirements for a residential land use scenario and to protect groundwater and the Columbia River. The results of visual inspection demonstrate that no contaminants remain at the waste site, and therefore the waste site meets human health direct exposure CULs for residential land use and applicable standards for groundwater and river protection in the shallow zone (i.e., surface to 4.6 m [15 ft] deep). The waste site contamination does not extend into the deep zone soils. The waste site remediation achieved cleanup requirements for residential land use and institutional controls are not required. The 300-278 waste site has been reclassified to “Final Closed Out.”

**4.266 300-288:1, PILES OF GARNET SAND/SOIL MIXTURE WITHIN GRAVEL PIT 6****4.266.1 History**

The 300-288:1 subsite consisted of two piles of garnet sand within a 5-m (16.4-ft)-diameter area. The total volume is approximately 15 m<sup>3</sup> (20 yd<sup>3</sup>) and each pile is estimated to be 5% garnet sand and 95% soil. Garnet sand was commonly used in grit-blasting operations to clean rust, paint, or contamination from the surface of metal components. The garnet sand material is not a hazardous substance, but there is potential for contamination from the surface material that was removed by grit blasting.

**4.266.2 In-Process Sampling**

An in-process composite sample consisting of 30 aliquots of garnet sand material was collected on June 24, 2014.

**4.266.3 Statement of Protectiveness**

Based on the in-process sampling results the 300-288:1 subsite has been reclassified to “Final No Action.”

**4.267 300-288:2, UNDOCUMENTED DISPOSAL SITE WITHIN GRAVEL PIT 6****4.267.1 History**

The 300-288:2, Undocumented Disposal Site Within Gravel Pit 6 subsite was described as having significant amounts of buried debris 1.8 to 2.4 m (6 to 8 ft) below ground surface, and was encountered as deep as 6 m (20 ft) below the original grade. The 300-288:2 subsite was located within the northeastern boundary of borrow pit 6, immediately west of Route 4S and the 300 Area.

Historically, Pit 6 was used as a borrow source for backfill material; however, evidence suggesting the site may have been used as a solid waste disposal site was observed. In December 2013, during the excavation of backfill material from Pit 6, debris was encountered approximately 1.8 to 2.4 m (6 to 8 ft) below original grade. The debris included reactor grade graphite, acid/thermal brick, and large concrete and steel debris. Limited amounts of lead and asbestos pipe fragments and boiler material were also observed to be present. A historical records search found no documentation of a solid waste disposal site within Pit 6.

**4.267.2 Excavation Operations**

Remediation of the 300-288:2 subsite was conducted in two stages and has been divided into an eastern half and a western half for sampling purposes. All material was direct loaded from the excavation into ERDF cans for disposal.

Remediation of the eastern half of the 300-288:2 subsite began on July 7, 2015, and was completed on January 11, 2016. The depth of the remediation ranged from 2.4 to 4.6 m (8 to 15 ft) bgs. An estimated 87,404 BCM (114,320 BCY) of contaminated soil and debris were removed from the excavation and disposed at ERDF. The debris consisted of fence posts, asphalt, concrete, steel, and other miscellaneous construction debris.

Remediation of the western half began on December 7, 2015, and was completed on June 15, 2016. The depth of the remediation ranged from 0.5 to 4.6 m (1.5 to 15 ft) bgs. An estimated 120,795 BCM (157,994 BCY) of contaminated soil and debris were removed from the excavation and disposed at ERDF. The debris consisted of fence posts, asphalt, concrete, steel, and other miscellaneous construction debris. Coal ash was also observed in the excavation during remediation.

**4.267.3 Verification Sampling**

Verification sampling for 300-288:2 East was performed on March 1 and 2, 2016, and for 300-288:2 West on June 16, 2016. The 300-288:2 subsite was divided into two decision units for verification sampling and consisted of the east and west portions of the remediation. Each decision unit was further divided into east and west sample areas.

Twelve statistical verification soil samples were collected from each sample area. Additionally, four focused samples were collected, three from locations where in-process samples detected contaminants above direct exposure CULs, and one from a location where elevated radiological activity was identified during remediation.

**4.267.4 Statement of Protectiveness**

Remedial actions at the 300-288:2 subsite indicate that the site supports future land uses that can be represented (or bounded) by the residential land-use scenario and poses no threat to groundwater or the Columbia River. The waste site was remediated to achieve CULs for residential land use; therefore, institutional controls are not required. The 300-288:2 subsite has been reclassified to a status of "Final Closed Out."

**4.268 300-289, STAINED SOIL AREA NORTH OF 300 AREA****4.268.1 History**

The 300-289 waste site consisted of an approximate 5-m (16.4-ft)-diameter area of bare ground located near a dirt road north of the 300 Area. The bare ground area included crusty, dark stained soil with two drum bung plugs. Remedial action was determined to be necessary because confirmatory sampling of the soil detected hexavalent chromium and PCBs at concentrations exceeding direct exposure CULs.

**4.268.2 Excavation Operations**

Remediation of the 300-289 waste site was performed from December 8 through 11, 2014. The excavation extended to an approximate maximum depth of 5.5 m (18 ft) bgs, resulting in approximately 1,728 BCM (2,260 BCY) of contaminated soil being removed for disposal at ERDF. No overburden soil was salvaged from the 300-289 waste site excavation and no staging pile areas were utilized.

**4.268.3 Verification Sampling**

Verification sampling within the 300-289 waste site excavation was performed on February 5, 2015.

**4.268.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed of at ERDF. The remaining soil at the 300-289 waste site has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the residential land use scenario and poses no threat to groundwater or the Columbia River. Because the waste site was remediated to achieve unlimited use and unrestricted exposure, institutional controls to maintain industrial land use are not required. The 300-289 waste site has been reclassified to a status of “Final Closed Out.”

**4.269 300-290, RADIOLOGICAL DEBRIS AREA EAST OF HORN RAPIDS DISPOSAL LANDFILL****4.269.1 History**

The 300-290 waste site was located approximately 70 m (230 ft) east of the northern most point of the Horn Rapids Landfill and measured approximately 8 by 8 m (26 by 26 ft). The waste site, which was posted as an underground radiological material area, consisted mostly of rusted metal automotive parts, scraps of crumpled sheet metal, electrical wire debris, and engine gaskets. No beta-gamma contamination was detected. The ballasts were managed as PCB items and were

moved to a storage location in the 400 Area. After removal of the ballasts, no contamination was detected in the area where the PCB ballasts were found.

#### **4.269.2 In-Process Sampling**

A composite in-process soil sample collected from the surface soils beneath the debris demonstrated that contamination above CULs did not exist at the site; therefore, no action was required.

#### **4.269.3 Statement of Protectiveness**

The in-process sampling results supported a reclassification of this waste site to “Final No Action.”

### **4.270 300-291, GARNET SAND WEST OF 350-A PAINT SHOP**

#### **4.270.1 History**

The 300-291 waste site consisted of garnet sand on a gravel roadbed approximately 60 m (197 ft) west of the former location of the 350 A Paint Shop. The majority of the garnet sand was no longer visible due to excavation and backfilling of the roadbed for installation of a water main pipeline. However, remaining garnet sand material and soil was located and sampled in the berm area along the roadway.

#### **4.270.2 Verification Sampling**

An in-process sample collected of garnet sand and soil and analyzed for metals, including mercury, indicated that contamination above CULs did not exist at the site; therefore, no action was required.

#### **4.270.3 Statement of Protectiveness**

The garnet sand left in place at the 300-291 waste site does not pose a risk to human health or the environment. The 300-291 waste site was reclassified to “Final No Action.”

### **4.271 300-292, 315 WATER FILTER PLANT WASTE PIPELINE SEGMENTS**

The 300-292, 315 Water Filter Plant Waste Pipeline Segments waste site included all abandoned nonhazardous waste pipeline segments associated with the process sewers that received filter backwash from the former 315 Water Filter Plant in the 300 Area. The process waste solutions for this site included nonhazardous solids suspended in water filter backwash from the 315 Water Filter Plant that were routed north to the 315C Sedimentation Pond (300 FBP:2) where the filter backwash sediments settled. Treatment chemicals used in the 315 Filter Plant included alum

(aluminum sulfate), chlorine gas, and separan (a polyacrylamide flocculent). Coal ash and filter backwash solutions were determined to be nonhazardous waste, and the associated waste sites (pipelines, ditches, and ponds) were designated as either “Final No Action” or “Rejected” waste sites. The 300-292 waste site has been reclassified to “Rejected” based on the evaluation and determination that coal ash and filter backwash waste solutions are nonhazardous waste and the reclassifications of the associated waste sites.

#### **4.272 300-293:1, 300 AREA MISCELLANEOUS PIPELINES – LESS THAN 2.5 FT BGS**

The 300-293:1, 300 Area Miscellaneous Pipelines – Less than 2.5 ft bgs were present throughout the 300 Area. The subsite consisted of 107 underground utility lines that are known to not be associated with hazardous waste because of their shallow depth. Pipelines with a depth of less than 0.762 m (2.5 ft) bgs were determined not to have been associated with liquid waste processes or facilities that may have contained hazardous materials. The remaining 171 segments not associated with the 300-293:1 subsite are addressed as a separate subsite.

Based on the standard design criteria the minimum earth cover above the top of piping must be 0.762 m (2.5 ft) to prevent freezing. In addition, in areas where roads, parking areas, or other compaction are to occur, the minimum earth cover must be 0.914 m (3 ft), and where infrequent flow occurs, 1.07 m (3.5 ft) of cover area is required. Therefore, it can be stated with confidence that pipelines with a cover of 0.762 m (2.5 ft) or less were not associated with liquid waste processes. The 300-293:1 subsite included all of the lines that are less than 0.762 m (2.5 ft) bgs, and has been reclassified to “Final No Action” based on the process knowledge that lines at this depth would not have contained liquid wastes or hazardous materials. A review of the shallow lines associated with this subsite indicated that they are mostly associated with telecommunications, electrical ductwork, and compressed gas.

#### **4.273 300-293:2, 300 AREA MISCELLANEOUS PIPELINES – GREATER THAN OR EQUAL TO 2.5 FT BGS**

##### **4.273.1 History**

The 300-293:2, 300 Area Miscellaneous Pipelines – Greater Than or Equal to 2.5 ft bgs consisted of 171 segments of underground utility lines in the 300 Area. These lines were identified on duct bank plans used for electrical upgrades in the early 1990s, unidentified underground utilities from historic drawings, or objects found on subsurface scans.

##### **4.273.2 Confirmatory Sampling**

Confirmatory sampling activities included excavation at locations of segments determined most likely to be present based on previous remedial activities, historical drawings, and professional knowledge.

**4.273.3 Statement of Protectiveness**

The results of confirmatory sampling demonstrated that residual contaminant concentrations do not preclude any future land uses (as bounded by a rural-residential scenario) and allowed for unrestricted future use of shallow zone soils (i.e., surface to 4.6 m [15 ft]). The results also showed that residual contaminant concentrations are protective of groundwater and the Columbia River. The 300-293:2 subsite was reclassified to “Final No Action.”

**4.274 300-294, GARNET SAND EAST OF 350 BUILDING****4.274.1 History**

The 300-294 waste site consisted of garnet sand on a gravel roadbed and adjacent field approximately 5 m (16.4 ft) east of the former location of the 350 Building. Evidence of garnet sand was found within a 60- by 24-m (197- by 78.7-ft) area of gravel and field. Support facilities at the 350 complex included the 350-A Building that housed spray painting and sandblasting operations.

**4.274.2 In-Process Sampling**

An in-process composite sample collected of garnet sand and soil and analyzed for metals, including mercury, indicated that contamination above CULs did not exist at the site; therefore, no action was required.

**4.274.3 Statement of Protectiveness**

The garnet sand left in place at the 300-294 waste site does not pose a risk to human health or the environment. The 300-294 waste site was reclassified to “Final No Action.”

**4.275 300-295, 384 POWERHOUSE COAL ASH WASTE PIPELINE SEGMENTS**

The 300-295, 384 Powerhouse Coal Ash Waste Pipeline Segments waste site included abandoned, nonhazardous waste pipeline segments and associated features (e.g., diversion valve box, manholes) that serviced the 384 Powerhouse coal ash waste disposal for sluicing to the 300 Ash Pits and/or to the 315C Sedimentation Pond. The associated coal ash pit waste site has been reclassified to a status of “Final No Action” based on the past practice knowledge that the waste streams were nonhazardous and based on post remediation characterization results for 300-FF-1 Operable Unit waste sites. The 300-295 waste site has been reclassified to “Rejected” based on the evaluation and determination that coal ash is a nonhazardous waste and that the reclassification status of associated waste sites.



**4.276 303-M SA, 303-M STORAGE AREA, 303-M BUILDING STORAGE AREA****4.276.1 History**

The 303-M Building Storage Area (303-M SA) was an inactive, curbed, concrete pad adjacent to the west side of the 303-M Uranium Oxide Facility. The area was used for storage of pyrophoric uranium and Zircaloy-2 chips and fines awaiting treatment in the 303 M Uranium Oxide Facility. The metal turnings were stored underwater in 113 L (30 gal) metal drums. The drums of fines were stored in a spaced array defined by painted yellow circles on the pad. The 303-M SA waste site was closed out with the 618-1 site.

**4.276.2 Excavation Operations**

Field remediation activities at the 618-1 Burial Ground were performed between September 17, 2008, and September 10, 2009. Approximately 47,332 metric tons (52,160 US tons) of soil and debris was excavated and disposed of at ERDF. Excavated material from the 618-1 Burial Ground consisted of contaminated soil and a variety of miscellaneous debris. Some LDR materials (lead solids contaminated with barium and chromium) were identified among the debris and were segregated from the bulk soil and non-LDR debris for disposal. Sorting and segregating of the bulk soil and non-LDR debris was conducted within the burial ground trenches. After sorting, the remaining bulk soil and non-LDR debris material stockpiles were sampled to ensure that the material was in compliance with land disposal restrictions.

**4.276.3 Verification Sampling**

Following remediation and field screening of the 618-1 Burial Ground, verification sampling was conducted on January 26 and 27, 2010. The number of decision subunits was determined by the overall footprint area of the decision unit, with the default number of verification samples for each decision unit being four composite samples. The 618-1 Burial Ground had both a shallow zone decision unit and a deep zone decision unit. Sample locations were determined using an automated sample design program that generates random sample locations based on the footprint of the excavated waste site. Each composite sample was formed by combining soil collected at four randomly selected nodes within each sampling area. In addition, 21 focused samples were collected from locations that had visual stains, buried liquid wastes, large inventories of hazardous wastes or areas where characterization results showed elevated contamination levels.

**4.276.4 Statement of Protectiveness**

Remedial actions were performed so as to allow industrial land use and to protect groundwater and the Columbia River. The 618-1 waste site had residual contamination in the deep zone (greater than 4.6 m [15 ft] bgs); therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are required. The 303-M SA site has been reclassified to “Final Closed Out” with the 618-1 waste site.

**4.277 303-M UOF, 303-M URANIUM OXIDE FACILITY****4.277.1 History**

The 303-M Uranium Oxide Facility (303-M UOF) was a reinforced concrete structure used to oxidize pyrophoric uranium metal turnings and chips and Zircaloy-2 fines generated during fuel fabrication machining operations in the 333 Building. During the four years that it was operational (1983 to 1987), the 303-M UOF converted 115 metric tons of uranium scrap into oxide form. The 303-M UOF Building was demolished in March 2006, and the debris was shipped to ERDF. The 303-M UOF waste site was closed out with the 618-1 site.

**4.277.2 Excavation Operations**

Field remediation activities at the 618-1 Burial Ground were performed between September 17, 2008 and September 10, 2009. Approximately 47,332 metric tons (52,160 US tons) of soil and debris was excavated and disposed of at ERDF. Excavated material from the 618-1 Burial Ground consisted of contaminated soil and a variety of miscellaneous debris. Some LDR materials (lead solids contaminated with barium and chromium) were identified among the debris and were segregated from the bulk soil and non-LDR debris for disposal. Sorting and segregating of the bulk soil and non-LDR debris was conducted within the burial ground trenches. After sorting, the remaining bulk soil and non-LDR debris material stockpiles were sampled to ensure that the material was in compliance with land disposal restrictions.

**4.277.3 Verification Sampling**

Following remediation and field screening of the 618-1 Burial Ground, verification sampling was conducted on January 26 and 27, 2010. The number of decision subunits was determined by the overall footprint area of the decision unit, with the default number of verification samples for each decision unit being four composite samples. The 618-1 Burial Ground had both a shallow zone decision unit and a deep zone decision unit. Sample locations were determined using an automated sample design program that generates random sample locations based on the footprint of the excavated waste site. Each composite sample was formed by combining soil collected at four randomly selected nodes within each sampling area. In addition, 21 focused samples were collected from locations that had visual stains, buried liquid wastes, large inventories of hazardous wastes or areas where characterization results showed elevated contamination levels.

**4.277.4 Statement of Protectiveness**

Remedial actions were performed so as to allow industrial land use and to protect groundwater and the Columbia River. The 618-1 waste site had residual contamination in the deep zone (greater than 4.6 m [15 ft] bgs); therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are required. The 303-M UOF site has been reclassified to “Final Closed Out” with the 618-1 waste site.

**4.278 307 RB, 307 RETENTION BASINS**

The 307 RB waste site is synonymous with a portion of the 340 Building. The facility consisted of four open, epoxy-coated, concrete basins. The 307 Retention Basins are located directly south of the 340 Building and the 340 Vault. The retention basins were fed by the retention process sewer and discharged to the 300 Area Process Sewer. The 307 RB waste site was remediated within the 340 Building and should not have been classified as a separate waste site. Therefore, the 307 RB waste site has been reclassified to “Rejected.”

**4.279 309-TW-1, 309-TW TANK #1, 309 HOLDUP TANKS**

The 309-TW-1 waste site is synonymous with a component of the 309 Facility. Tank 309-TW-1 was the northernmost tank in the 309 Holdup Tank System. Contaminated liquid waste from the operation of the PRTR was pumped to the holdup tanks prior to discharge to the radioactive liquid waste sewer. The 309 facility included remediation of the 309-TW-1 waste site, and the tank should not have been classified as a separate waste site. Therefore, the 309-TW-1 waste site has been reclassified to “Rejected.”

**4.280 309-TW-2, 309-TW TANK #2, 309 HOLDUP TANKS**

The 309-TW-2 waste site is synonymous with a component of the 309 Facility. Tank 309-TW-2 was the center tank in the 309 Holdup Tank System. Contaminated liquid waste from the operation of the PRTR was pumped to the holdup tanks prior to discharge to the radioactive liquid waste sewer. The 309 facility included remediation of the 309-TW-2 waste site and the tank should not have been classified as a separate waste site. Therefore, the 309-TW-2 waste site has been reclassified to “Rejected.”

**4.281 309-TW-3, 309-TW TANK #3, 309 HOLDUP TANKS**

The 309-TW-3 waste site is synonymous with a component of the 309 Facility. Tank 309-TW-3 was the southernmost tank in the 309 Holdup Tank System. Contaminated liquid waste from the operation of the PRTR was pumped to the holdup tanks prior to discharge to the radioactive liquid waste sewer. The 309 facility included remediation of the 309-TW-3 waste site, and the tank should not have been classified as a separate waste site. Therefore, the 309-TW-3 waste site has been reclassified to “Rejected.”

**4.282 309-WS-1, 309 PLUTONIUM RECYCLE TEST REACTOR ION EXCHANGER VAULT, REACTOR ION EXCHANGE PIT, PRTR ION EXCHANGE VAULT**

The 309-WS-1 waste site is synonymous with a component of the 309 Facility. The 309-WS-1 Vault was a below grade, reinforced concrete structure containing two levels. The vault had connecting piping to the dome. Prior to deactivation, the unit was used to remove contaminants from the heavy water and shield cooling systems. The 309 facility included remediation of the 309-WS-1 waste site, and the vault should not have been classified as a separate waste site. Therefore, the 309-WS-1 waste site has been reclassified to “Rejected.”

**4.283 309-WS-2, RUPTURE LOOP ION EXCHANGE PIT, ION EXCHANGE VAULT, RUPTURE LOOP ANNEX ION EXCHANGE LOOP VAULT, RLAIX PRTR RUPTURE LOOP**

The 309-WS-2 waste site is synonymous with a component of the 309 Facility. The vault underwent deactivation activities in 1996. The 309-WS-2 Ion Exchange Vault was an underground reinforced concrete structure. The unit was located off of the northwest side of the 309 Containment Dome. The 309 facility included remediation of the 309-WS-2 waste site, and the vault should not have been classified as a separate waste site. Therefore, the 309-WS-2 waste site has been reclassified to “Rejected.”

**4.284 309-WS-3, 309 BRINE TANK**

The 309-WS-3 waste site is synonymous with a component of the 309 Facility. The 309-WS-3 brine tank was a below grade, rectangular concrete structure with two chambers. Access/loading ports were installed on the top of the tank. The unit was located below grade, off the southwest corner of the 309 Building. During use the container held salt that was slurried and pumped through plastic pipes to three brine tanks located in the basement of the 309 Building. These tanks supplied process water used to cool several small heat exchangers for the reactor. The 309 facility included remediation of the 309-WS-3 waste site, and the brine tank should not have been classified as a separate waste site. Therefore, the 309-WS-3 waste site has been reclassified to “Rejected.”

**4.285 311 MT1, 311 METHANOL TANK 1, 311 TANK FARM UNDERGROUND METHANOL TANK #1, 311-1**

The 311 MT1 site consisted of a horizontal, flat-ended cylindrical tank. While in service the unit stored pure methanol used as a final rinse to remove water from aluminum end caps and cans in the “triple dip” and “lead dip” fuel fabrication process. The tank was in use until 1971, when the tank was pumped out and filled with water. The tank was emptied in 1987 and removed on August 30, 1989. The 311 MT1 waste site has been reclassified to “Final Closed Out.”

**4.286 311 MT2, 311 METHANOL TANK 2, 311 TANK FARM UNDERGROUND METHANOL TANK #2, 311-2**

The 311 MT2 site consisted of a horizontal, cylindrical tank, while in service the unit stored used methanol solution generated in the 313 fuel fabrication/final rinse process, until the solution was de-watered in the still. The de-watered methanol was then added to the 311 Methanol Tank (311 MT1). The tank was in use until 1971, when the tank was pumped out and filled with water. The tank was emptied in 1987 and removed on August 30, 1989. The 311 MT2 waste site has been reclassified to “Final Closed Out.”

**4.287 313 CRO, 313 COPPER REMELT OPERATIONS, 313 BUILDING COPPER REMELT OPERATIONS**

The 313 Copper Remelting Operation was originally performed from 1968 to 1973 in the 305-B Building. The operation moved to 313 in 1973. Copper-silicon alloy scrap materials from the fuel fabrication process were collected, melted, cast, and machined for reuse in the N Reactor Fuel Fabrication operations. The unit processed 270 kg (600 lb) per day when in operation. The site has been classified as “Not Accepted.”

**4.288 313 ESSP, 313 EAST SIDE STORAGE PAD, 313 BUILDING EAST SITE STORAGE PAD****4.288.1 History**

The 313 ESSP, 313 East Side Storage Pad waste site was the footprint of a large concrete pad that was adjacent to the southeast side of the 313 Building and included an asphalt ramp that connected the pad to Ginko Street. Previously the site staged radiological waste from 313 Building operations and, during fuel fabrication operations, staged mixed waste, including byproduct waste materials from the fuels fabrication process and neutralized solids from the 313 Recovery Operations process. The unit was also used to stage raw materials received by rail cars.

**4.288.2 Excavation Operations**

Remediation of a large portion of the 313 ESSP waste site was performed by the excavation of concrete, asphalt, and underlying soil during the remediation of the UPR-300-38 waste site and the adjacent area near the footprint of the former 303-F Building. This work was performed on July 8, 2011. The soil within the waste site footprint was excavated to a depth of 1 m (3.3 ft) bgs, and the resulting 153 BCM (205 BCY) of soil was disposed at ERDF. Approximately 98 BCM (128 BCY) was associated with the UPR-300-38 excavation; the remainder 55 BCM (72 BCY) was associated with the 313 ESSP excavation near the footprint of the former 303-F Building. An additional 38 BCM (50 BCY) was removed from the northeast

corner and the southern edge of the 313 ESSP waste site on August 26, 2011, resulting in a total of 191 BCM (250 BCY) of debris and soil removed from the 313 ESSP waste site.

#### **4.288.3 Verification Sampling**

Verification sampling for the combined UPR-300-38, 313 ESSP, and 300-270 waste sites was conducted on December 16 and 19, 2011, and January 26, 2012. A statistical sampling approach was utilized for the combined UPR-300-38, 313 ESSP, and 300-270 waste sites excavation. In addition 13 focused soil samples were collected from the areas exhibiting elevated beta activity.

#### **4.288.4 Statement of Protectiveness**

The contaminated materials from 313 ESSP waste site has been excavated and disposed of at ERDF. The remaining soil at the 313 ESSP waste sites has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land use scenario and poses no threat to groundwater or the Columbia River. Because this waste site was remediated to achieve CULs for industrial land use, institutional controls to maintain industrial land use are required. The 313 ESSP waste site was reclassified to “Final Closed Out.”

#### **4.289 313 MT, 313 METHANOL TANK, 313 BUILDING UNDERGROUND METHANOL STORAGE TANK**

The 313 MT site consisted of a steel cylindrical tank lying horizontally below the floor of the 313 Building. The tank was to be used as an emergency dump tank. In case of a fire in the 313 Building, the methanol from the dehydration tanks could be released to the underground tank. The tank was never used for an emergency dump. The tank was filled with water in 1971, and emptied in 1987. A total of 2,271 L (600 gal) of water and 0.7% methanol was removed from the tank. The tank was removed on August 30, 1989. The tank inspection and sampling indicated that the tank had not leaked. The excavation was backfilled on the completion of the tank removal. The 313 MT site has been reclassified to “Final Closed Out.”

#### **4.290 313 URO, 313 URANIUM RECOVERY OPERATIONS, URANIUM RECOVERY OPERATIONS**

The 313 Uranium Recovery Operations processed uranium-bearing acid wastes from the fuel fabrication processes to recover uranium for recycle. U-bearing acid wastes were received from the 313 Fuels Operations until 1971. From 1961 until shutdown in 1987, U-bearing waste acid solutions were transferred from tank TK-24 in the 333 Building to two outside storage tanks on the west side of the 333 Building. In 1997, the 313 Uranium Recovery Operation process equipment and piping were removed and the concrete surfaces scabbled and decontaminated. Tanks TK-5, TK-9, TK-10, and the filter press (WIDS Site 313 FP) were shared equipment with the WATS. This equipment was removed under the Phase 1 WATS closure activities.

Ecology inspected the 313 WATS area in October 1997, and concurred that the work was completed in accordance with the Phase 1 Plan. All other 313 Uranium Recovery Operations equipment was also removed in 1997. The site was reclassified to Closed Out in 1999 and, subsequently, “Consolidated” into the UPR-300-38 waste site.

#### **4.291 315 RSDF, 315 RETIRED SANITARY DRAIN FIELD**

The 315 RSDF was an abandoned septic tank and drain field. The 315 RSDF received sanitary waste that originated in the 315 Water Filter Plant. The system was abandoned in 1978 when the sanitary sewer was routed to the 3906 Lift Station. Information obtained from the Water Filter Plant personnel indicated that the only water treatment chemicals used at the plant were alum (nonhazardous) and chlorine gas. The 315 RSDF has been reclassified to “Rejected.”

#### **4.292 316-3, 307 DISPOSAL TRENCHES, PROCESS WATER TRENCHES**

##### **4.292.1 History**

The 316-3 waste site consisted of two parallel infiltration ditches that received liquid effluent from early 300 Area Laboratory expansion facilities, including the 329, 327, 324, 326, and 329 Buildings. Process effluent first went through the 307 Retention Basins where it was sampled. Effluent below discharge limits was released to the trenches from 1953 to 1963. Effluent above discharge limits was transported to the 200 Area for disposal.

##### **4.292.2 Excavation Operations**

Remediation of the 316-3 waste site was preformed from December 17, 2014, to April 30, 2015. Approximately 69,834 BCM (91,339 BCY) of excavated materials were removed from the 316-3 and 300-263 waste sites and direct loaded for disposal at ERDF. The maximum depth of the 300-263 and 316-3 waste sites combined excavation was approximately 11.3 m (37 ft) bgs on the west end, and approximately 9.8 m (32 ft) bgs at the center and east end of the excavation. Excavated materials consisted of radiologically contaminated soil, gravel, coal ash, and limited debris associated with deactivated underground utilities. No overburden soil was salvaged from the waste site excavation and no staging pile areas were utilized.

##### **4.292.3 Verification Sampling**

Verification sampling within the 316-3 and 300-263 waste site excavation was performed on May 14, 2015. Two decision units were identified for the two waste sites: the deep zone excavation footprint and the shallow zone excavation footprint. Twelve statistical verification soil samples were collected from each of these decision units.

**4.292.4 Statement of Protectiveness**

The contaminated materials from 316-3 site have been excavated and disposed of at ERDF. The remaining soil at the 316-3 waste site have been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land use scenario and poses no threat to groundwater or the Columbia River. Because this waste site was remediated to achieve CULs for industrial land use, institutional controls to maintain industrial land use are required. The 316-3 waste site has been reclassified to a status of “Final Closed Out.”

**4.293 323 TANK 1, 321 BUILDING UNDERGROUND WASTE TANKS, 321 TANK FARM #3 (SEE TANK 323 4)**

The 323 Tank 1, 321 Building Underground Waste Tanks, 321 Tank Farm #3 waste site was located within the footprint of the remediation and excavation of the UPR-300-4, UN-300-4, Contaminated Soil Beneath the 321 Building waste site. The 323 Tank 1 waste site consisted of 1 of 4 waste tanks that received contaminated liquids from processes in the 321 Building. The UPR-300-4 excavation and remediation completely removed the footprint of the 323 Building and the 323 waste tanks. Closure of the soils below the 323 Building and the 323 waste tanks were addressed as part of the closure of the UPR-300-4 waste site. Because the 323 waste tanks have been completely removed and the underlying soils were addressed in the closure documentation for the UPR-300-4 waste site, the 323 Tank 1, 321 Building Underground Waste Tanks, 321 Tank Farm #3 waste site has been reclassified to “Rejected.”

**4.294 323 TANK 2, 321 BUILDING UNDERGROUND WASTE TANKS, 321 TANK FARM #3 (SEE 323 TANK 4)**

The 323 Tank 2, 321 Building Underground Waste Tanks, 321 Tank Farm #3 waste site was located within the footprint of the remediation and excavation of the UPR-300-4, UN-300-4, Contaminated Soil Beneath the 321 Building waste site. The 323 Tank 2 waste site consisted of one of four waste tanks that received contaminated liquids from processes in the 321 Building. The UPR-300-4 excavation and remediation completely removed the footprint of the 323 Building and the 323 waste tanks. Closure of the soils below the 323 Building and the 323 waste tanks were addressed as part of the closure of the UPR-300-4 waste site. Because the 323 waste tanks have been completely removes and the underlying soils were addresses in the closure documentation for the UPR-300-4 waste site, the 323 Tank 2, 321 Building Underground Waste Tanks, 321 Tank Farm #3 waste site has been reclassified to “Rejected.”



**4.295 323 TANK 3, 321 BUILDING UNDERGROUND WASTE TANKS,  
321 TANK FARM #3 (SEE 323 TANK 4)**

The 323 Tank 3, 321 Building Underground Waste Tanks, 321 Tank Farm #3 waste site is located within the footprint of the remediation and excavation of the UPR-300-4, UN-300-4, Contaminated Soil Beneath the 321 Building waste site. The 323 Tank 3 waste site consisted of one of four waste tanks that received contaminated liquids from processes in the 321 Building. The UPR-300-4 excavation and remediation completely removed the footprint of the 323 Building and the 323 waste tanks. Closure of the soils below the 323 Building and the 323 waste tanks were addressed as part of the closure of the UPR-300-4 waste site. Because the 323 waste tanks have been completely removed and the underlying soils were addressed in the closure documentation for the UPR-300-4 waste site, the 323 Tank 3, 321 Building Underground Waste Tanks, 321 Tank Farm #3 waste site has been reclassified to “Rejected.”

**4.296 323 TANK 4, 321 BUILDING UNDERGROUND WASTE TANKS, 321 TANK  
FARM #3**

The 323 Tank 4, 321 Building Underground Waste Tanks, 321 Tank Farm #3 waste site is located within the footprint of the remediation and excavation of the UPR-300-4, UN-300-4, Contaminated Soil Beneath the 321 Building waste site. The 323 Tank 4 waste site consisted of one of four waste tanks that received contaminated liquids from processes in the 321 Building. The UPR-300-4 excavation and remediation completely removed the footprint of the 323 Building and the 323 waste tanks. Closure of the soils below the 323 Building and the 323 waste tanks were addressed as part of the closure of the UPR-300-4 waste site. Because the 323 waste tanks have been completely removed and the underlying soils were addressed in the closure documentation for the UPR-300-4 waste site, the 323 Tank 4, 321 Building Underground Waste Tanks, 321 Tank Farm #3 waste site has been reclassified to “Rejected.”

**4.297 331 LSLDF, 331 LSL DRAIN FIELD, 331 LIFE SCIENCES LABORATORY  
DRAINFIELD****4.297.1 History**

The 331 LSLDF waste site was a septic system consisting of a diversion chamber, two (dual-chambered) septic tanks, a distribution box, and a drain field connected to the 331 complex. This septic system was designed to receive sanitary wastewater associated with animal studies from the 331-A and 331-B Buildings for discharge into the soil column. The 331 LSLDF septic system was operational from 1970 to 1974, at which time the sanitary sewer connections were rerouted to the 300 Area Sanitary Sewer. The 331 LSLDF septic system was fully isolated and abandoned in place in 1974.

**4.297.2 Confirmatory Sampling**

Confirmatory sampling of the drain field and the soil around the distribution box was performed between April 14, 2007, and April 24, 2007. Historical data, process knowledge, site visit observations, and other available information were used to develop the site-specific sample design. The sample design included focused samples to be collected at locations where contamination was most likely to be found. These samples included two samples from a test pit at the distribution box, one from within the distribution box, and one from beneath the pipes exiting the distribution box. Additionally, two trenches were excavated within the drain field to access residual sediments and underlying soils to allow for composite samples collection from inside and below each of the six laterals from each trench.

**4.297.3 Statement of Protectiveness**

Confirmatory sampling was performed to determine the nature and extent of the 331 LSLDF waste site contamination. The analytical data were shown to meet the cleanup objectives for industrial direct exposure, groundwater protection, and river protection. The waste site requires institutional controls to maintain industrial land use. The 331 LSLDF waste site has been reclassified to “Final No Action.”

**4.298 331-C HWSA, 331-C HAZARDOUS WASTE STORAGE AREA,  
331-C LOW LEVEL RADIOACTIVE STORAGE AREA**

The 331-C HWSA waste site was the 90-day storage pad originally set up under RCRA for the management of hazardous waste generated from animal research in the 331 complex. In the late 1960s, 1,500 dogs were exposed to either strontium-90 or radium-226. As the dogs died, their bones and tissues were tested for the movement and accumulation of isotopes. The dog bones and tissues (contaminated with strontium-90 and cesium-137) were stored in 70% ethanol solution, nitric acid, formalin and regulated empty containers. The RCRA 90-Day Storage Area is inactive and all hazardous materials were removed by September 30, 1996. The site is managed as low level radioactive nonhazardous waste accumulation area, therefore, the 331-C HWSA waste site has been reclassified to “Rejected.”

**4.299 333 ESHTSSA, 333 EAST SIDE HEAT TREAT SALT STORAGE AREA**

The 333 ESHTSSA was an inactive storage area. The site included various locations inside the 333 fence where heat-treat salts were stores. The site was used to store containers of solidified heat-treat salt waste from the fuels fabrication facility. The waste consisted of sodium chloride, potassium chloride, sodium nitrate, and potassium nitrate. Approximately, thirty to fifty 208 L (55-gal) drums accumulated each year. The 333 ESHTSSA waste site was “Consolidated” with the 618-1 waste site.

**4.300 333 ESHWSA, 333 EAST SIDE HWSA, 333 BUILDING EAST SIDE  
HAZARDOUS WASTE STORAGE AREA**

The 333 Building East Side Hazardous Waste Storage Area (333 ESHWSA) was a part of the asphalt paved area near the northeast corner of the 333 Building, within the building fence line. For many years, the fenced area behind 333 Building had been used for storage of miscellaneous wastes in drums. The area contained small quantities of miscellaneous waste oils, cutting lubricants, chemicals, and solvents stored in containers. In previous years, the area was used for miscellaneous radioactive and hazardous waste storage. The 333 ESHWSA waste site has been remediated and reclassified to “Final Closed Out” with the 618-1 waste site.

**4.301 333 LHWSA, 333 LAYDOWN HWSA, 333 LAYDOWN HAZARDOUS WASTE  
STORAGE AREA**

The 333 LHWSA was a concrete and asphalt pad on the east side of the 333 Building. The unit was within the 333 Building fence, and a second locked fence surrounded the unit. The area inside the fence was originally a material laydown area. Then this area contained wastes that were segregated into a 90-Day Storage Pad for hazardous wastes and a Radioactive Material Area for low level radioactive waste storage. The area typically contained corrosive and toxic metal wastes. The 333 LHWSA site was “Consolidated” and dispositioned as part of the 618-1 waste site.

**4.302 333 WSTF, 333 WEST SIDE TANK FARM, 333 WEST SIDE WASTE OIL TANK,  
333 WEST SIDE URANIUM BEARING ACID TANKS, 333 WSWOT****4.302.1 History**

The 333 West Side Tank Farm (WSTF) waste site was located on the west side of the former 333 Building. This site was an above-grade tank farm containing three cylindrical tanks that stood upright within a concrete containment basin.

**4.302.2 Excavation Operations**

Remediation of the 333 WSTF waste site was performed on December 14, 2009. The soil within the waste site footprint was excavated to a depth of 1 m (3.3 ft) bgs, and the resulting 40 BCM (52 BCY) of soil was disposed at the ERDF.

**4.302.3 Verification Sampling**

Verification sampling for the 300-219, 300-224, and 333 WSTF waste sites was conducted August 25, 2011. A focused sampling design was selected for the 300-219, 300 224, and 333 WSTF waste sites based primarily on endpoints and intersections of the pipelines.

Seventeen verification focused samples were collected from the 300-219, 300-224, and 333 WSTF waste site excavation.

#### **4.302.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed at ERDF. The 333 WSTF waste site was evaluated against the criteria established for the industrial land use criteria and results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land use scenario and poses no threat to groundwater or the Columbia River. The 333 WSTF waste site was reclassified to a status of “Final Closed Out.”

#### **4.303 335 & 336 RSDF, 335 & 336 RETIRED SANITARY DRAIN FIELD**

The 335 & 336 RSDF waste site was a below grade waste site consisting of a septic tank and drainfield that have been abandoned in place. Only a riser from the septic tank was visible in the field. There was no evidence of a drainfield. The unit disposed of sanitary waste generated in the 335 and 336 Buildings. The unit has been abandoned in place. The 335 and 336 Building were connected to the 300 Area Sanitary sewer prior to demolition. The 335 & 336 RSDF site has been reclassified to “Rejected.”

#### **4.304 340 CHWSA, 340 COMPLEX HWSA, 340 COMPLEX HAZARDOUS WASTE STORAGE AREA**

The 340 CHWSA site stored hazardous waste for less than 90 days at various areas throughout the 340 COMPLEX yard. This included a small concrete pad to the northeast of 340B, and the asphalt pad to the west of the 340 Building. Active 90-day waste storage and dangerous waste satellite accumulation areas and their locations must be maintained as part of the operating record for the facility. Therefore, the 340 CHWSA site has been reclassified to “Rejected.”

#### **4.305 340 COMPLEX, 340 RADIOACTIVE LIQUID WASTE HANDLING FACILITY**

##### **4.305.1 History**

The 340 Complex consisted of four buildings (340, 340-A, 340-B, 3707-F) and two office trailers. Other 340 Complex systems included the 307 Retention Basins, two tanks in an underground vault, six aboveground tanks in 340-A, underground transfer pipes, load-out and decontamination equipment, and instrumentation. The 340 Complex served as a liquid effluent accumulation facility that also adjusted pH prior to shipment to the 200 Area Double-Shell Tank System.

The 340 Complex received liquid effluent from 300 Area laboratories via the 300 Area Piping networks. Facilities contributing effluent to the 340 Complex included the RRLWS, RLWS,

Retention Process Sewer, and Process Sewer. The sewer effluent was collected in the 340 underground vault tanks and the 307 Retention Basins for subsequent loadout into tanker trucks and, later, rail tank cars. Sewer effluent contained a wide array of radiological and chemical constituents that included organic and inorganic laboratory chemicals, acids, bases, and decontamination solutions.

#### **4.305.2 Excavation Operations**

The 340 Complex Buildings (340, 340A, 3707F, 340B) were demolished in 2011. Demolition of the 307 Retention Basins was completed in June 2012. Remediation of subsurface structures and soils, and construction of the ramp for removal of the 340 underground vault began in March 2012. The 340 vault contained two 56,700-L (15,000-gal) stainless steel tanks that were located below grade. The vault was 12.5 m (41 ft) long, 8.8 m (29 ft) wide and 7.6 m (25 ft) high. It had a lift weight of 2.3 million pounds and a transport weight of 3 million pounds. The stainless steel tanks were stabilized in place with grout. Soil around the entire vault was excavated to provide access for equipment used to lift and transport the vault to ERDF. In August 2012, approximately 2,455 BCM (3,211 BCY) of contaminated soils were removed and disposed at ERDF.

In 2013, during the installation of the lift supports for vault removal, highly contaminated soil under the 340 Vault was identified near the vault's sump area. The vault removal was delayed to characterize the soil contamination beneath the vault. An estimated 35,496 BCM (46,427 BCY) of soils and materials associated with the 340 facility, including vault and ramp construction, was removed from the 340 Complex excavation. Following vault removal, the 340 Complex excavation resumed to remove underlying contaminated soils and additional contamination found on the sidewalls of the excavation. Remediation of the 340 Complex was completed on October 13, 2014. A total of approximately 40,874 BCM (53,461 BCY) of excavated materials were removed and loaded for direct disposal at ERDF. The maximum depth of the waste site excavation was approximately 11 m (36 ft). Excavated materials consisted of soil, gravel, concrete, piping, and other demolition debris. The 340 Complex waste site was remediated to groundwater.

#### **4.305.3 Verification Sampling**

Verification sampling for the 340 Complex waste site was performed between February 10 and 12, 2015. Two decision units were identified for the 340 Complex waste site: the deep zone excavation footprint and the shallow zone excavation footprint. A total of 15 statistical verification soil samples were collected from each of these decision units. In addition, one focused sample was collected from the fill material at the bottom of the excavation for informational purposes only to document the as-left condition of the site.

#### **4.305.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed of at ERDF. The remaining soil at the 340 Complex waste site has been sampled, analyzed, and evaluated.

Results indicate that the site supports future land uses that can be represented (or bounded) by the residential land use scenario and poses no threat to groundwater or the Columbia River. The results of verification sampling show that residual contaminant concentrations meet human health direct exposure CULs for residential land use and applicable standards for groundwater and river protection in the shallow zone (i.e., surface to 4.6 m [15 ft] deep). The site meets the requirements for unlimited use and unrestricted exposure, and institutional controls to maintain industrial land use are not required. The 340 Complex waste site has been reclassified to “Final Closed Out.”

#### **4.306 350 HWSA, 350 BUILDING HAZARDOUS WASTE STORAGE AREA, 350-D HAZARDOUS WASTE STAGING AREA**

The 350 HWSA site was a staging area used to temporarily store hazardous wastes, including corrosive chemicals, used oils, and PCB-contaminated oils. Combustible liquids and PCB containing waste were stored inside the 350-D Building. Active 90-day waste storage and dangerous waste satellite accumulation areas and their locations must be maintained as part of the operating record for the facility. Therefore, the 350 HWSA site has been reclassified to “Rejected.”

#### **4.307 600-22, UFO LANDING SITE**

The 600-22 site appears on aerial photos as a large, asterisk-shaped area. It was a vegetation-free area that was not marked or easily distinguished on the ground from the surrounding terrain. The vegetation in the area was removed in the 1940s to create a visual practice target for military airplanes. Practice bombs were constructed of thin sheet metal which can easily be bent with manual pressure and appear to be the size of 113.6 kg (250 lb) bombs. The items were completely hollow; there are no nose or tail fuses or evidence of the use of spotting charges in the nose. In some cases, the items collapsed upon impact without fragmenting leaving recognizable tailfins and noses. The filler caps were found in the nose, which were possibly used to fill the practice bombs with sand or water. In 2013, the 600-22 waste site was identified as requiring no further action to meet the selected remedy requirements. The 600-22 did not require remediation and has been reclassified to “Final No Action.”

#### **4.308 600-47, DUMPING AREA NORTH OF 300-FF-1**

##### **4.308.1 History**

The 600-47 site was located in the 300 Area near the banks of the Columbia River across from Johnson Island. It consisted of surface and subsurface debris including wood, concrete, bricks, glass, steel, plastic, paper, wire, piping, broken bottles, and clay pipe. Contaminated material identified in field surveys included four areas of soil, wood, nuts and bolts, and other metal debris. Most of the debris and contamination was identified during installation of the 300 Area

Treated Effluent Disposal Facility outfall pipeline in 1992 and from area radiological surveys performed in 1993. Some of the debris identified at this site pre-dated Hanford Site operations. The area within and around the 600-47 waste site is considered culturally sensitive.

#### **4.308.2 Excavation Operations**

Remedial action activities at the 600-47 site began in December 2004. For the remedial action effort, the site was divided into seven subareas based on observed occurrences of contamination. Excavated material consisted of contaminated soil and small quantities of metal shavings and miscellaneous construction-type debris. Remedial action excavation was completed in February 2005. Approximately 2,159 metric tons (2,380 US tons) of material from the site were removed and disposed of at ERDF.

#### **4.308.3 Verification Sampling**

Field cleanup verification samples were collected on May 25, 2005. One statistical decision unit was identified for 600-47 waste site verification sampling. Sample locations were randomly identified within each excavation subarea.

#### **4.308.4 Statement of Protectiveness**

The contaminated materials from the 600-47 site have been excavated and disposed of at ERDF. The remaining soils at this site have been sampled, analyzed, and modeled. The analytical and modeling results indicated that residual concentrations in the shallow zone will support future land use that can be represented (or bounded) by an unrestricted land use scenario and that residual concentrations throughout this site pose no threat to groundwater or the Columbia River. The 600-47 waste site has been reclassified to “Final Closed Out.”

### **4.309 600-96, 618-10 BORROW PIT**

The 600-96 waste site was adjacent to the southwest corner of the 618-10 Burial Ground. The site was sandy and mostly unvegetated. The site had been scraped for material to cover the adjacent burial ground. No waste was observed in the area in 1995, except for a large pile of tumbleweeds that were removed from the fence surrounding the 618-10 Burial Ground. The 600-96 site has been classified as “Not Accepted.”

### **4.310 600-97, 618-11 BORROW PIT**

The 600-97 waste site was located in a slight depression where 0.3 to 0.6 m (1 to 2 ft) of soil had been removed to cover the 618-11 Burial Ground. No waste or evidence of the presence of hazardous substances was observed during the site investigation. The 600-97 site has been classified as “Not Accepted.”

**4.311 600-117, 300 AREA TREATED EFFLUENT DISPOSAL FACILITY (TEDF),  
310 BUILDING**

The 600-117 waste site originally included the main treatment building (310 Building), three modular/mobile offices, two exterior diversion tanks, one exterior equalizer tank, two clarifier tanks, two drum storage areas, and one chemical storage area. All of these components were surrounded by a chain link fence. The 310 Building and two clarifier tanks were demolished in 2012. The chemical storage area, one drum storage area, and mobile offices were also removed. Below grade demolition was completed in December 2012. The primary effluent concrete sump was cleaned of debris and surveyed following demolition. The sump was found to be free of contamination; therefore, it was left in place. The remaining portions of the original facility were reconfigured to accept process sewer effluent from the 325 laboratory operations. These active components became part of the 600-352-PL waste site. The 600-117 waste site has been reclassified to "Rejected."

**4.312 600-210, 300 AREA TEDF OUTFALL**

The 600-210 waste site was the outfall line that is a 25 cm (10 in.) polyvinyl chloride pipeline that is routed to the shore of the Columbia River. At the shoreline the pipe is transitioned to a 20 cm (8 in.) ductile iron pipe that transferred the effluents to the mid-channel single-point diffuser. The outfall discharged treated effluent released from the 300 TEDF. The influent to the 300 TEDF was generated by facilities discharging to the 300 Area process sewer. The 600-210 site has been classified as "Not Accepted."

**4.313 600-243, PETROLEUM CONTAMINATED SOIL BIOREMEDIATION PAD,  
BIOREMEDIATION PAD INSIDE GRAVEL PIT #6, PIT 6,  
OIL CONTAMINATED SOIL****4.313.1 History**

The site was used as a bioremediation pad for petroleum-contaminated soils resulting from the 1100 Area UST upgrades in 1994. The petroleum-contaminated soil that made up this waste site was placed on a plastic liner. Soil surrounding and underneath this plastic liner contains significant amounts of coal ash. Additionally, there was evidence that oils had been applied in the general area of the 600-243 waste site, most likely for dust suppression.

**4.313.2 Excavation Operations**

The 600-243 waste site was remediated in August 2007. Approximately 2,134 BCM (2,791 BCY) of soil and plastic was removed via direct loadout and disposed to ERDF. As expected based on the geophysical investigation and observations of the soil surrounding the



waste site, a significant amount of coal ash was found below the plastic liner of the waste site during remediation.

#### **4.313.3 Verification Sampling**

Verification sampling for the 600-243 waste site was performed on October 1, 2007. The 600-243 waste site excavation footprint was a single decision unit for the purpose of verification sampling. A total of 11 soil samples were collected on a random-start, triangular grid for this sampling area.

#### **4.313.4 Statement of Protectiveness**

The contaminated materials from the 600-243 site have been excavated and disposed of at ERDF. Statistical sampling to verify the completeness of remediation was performed and analytical results for the decision unit were shown to meet the cleanup objectives for direct exposure, groundwater protection, and river protection. The site does not have a deep zone or residual contaminant concentrations that would require any institutional controls. The 600-243 waste site has been reclassified to “Final Closed Out.”

#### **4.314 600-244, GRAVEL PIT #6, PIT 6**

The 600-244 pit is a source for gravel used for bedding and backfill material. A gravel road leads into a large irregular shaped pit area. The physical boundaries of the site are larger than the area where gravel was removed. The materials were excavated using tractors or front end loaders and transported offsite in dump trucks. The Borrow Pit 6 expansion was approved in August 2013. The 600-244 waste site has been classified as “Not Accepted.”

#### **4.315 600-249, DEBRIS WITHIN GRAVEL PIT 6**

The 600-249 waste site consisted of areas of dumped material located within Gravel Pit #6. There are spoil piles of material excavated during the construction of the Environmental Molecular Sciences Laboratory facility that were located in the northwest section of the Gravel Pit #6 property boundaries. Miscellaneous trash and debris could be seen in scattered piles and protruding from the soil. In February 1999, the discarded tires were removed from the area and taken to 2711E to be recycled through Fleet Maintenance. Other debris was removed at the same time and disposed of as regular trash. The 600-249 site has been reclassified to “Rejected.”

#### **4.316 600-255, 300 AREA STORMWATER PERCOLATION POND**

The 600-255 site is a very large, unlined basin. The stormwater was directed to two collection points inside the 300 Area, located adjacent to the west 300 Area perimeter fence, behind the 3715-B Building that has a packed gravel surface. The water flows through piping, under the

highway, to the basin. There is no documentation to confirm that contamination exists beneath the gravel surface behind the 3754 Building. Since no weeds are growing in the gravel, it is possible the gravel is sprayed with herbicide. The 600-255 site has been reclassified to "Not Accepted."

#### **4.317 600-259:1, GROUT LYSIMETER SITE, GROUT WASTE TEST FACILITY AND 600-259:2, GROUT LYSIMETER SITE, SPECIAL WASTE FORM LYSIMETER**

##### **4.317.1 History**

The 600-259 waste site was located west of Route 4 South and southeast of the 618-10 Burial Ground. The site consisted of the Special Waste Form Lysimeter, constructed in 1983 as 10 soil-filled caissons located concentrically around a central access caisson. The Special Waste Form Lysimeter was renamed as 600-259:2 subsite. Each lysimeter was equipped with a gravity drain attached to the central caisson for leachate collection. The Special Waste Form Lysimeter was used to collect information between 1984 and 1992 regarding the leaching behavior of commercial reactor waste contaminants. Leachate was collected by PNNL and disposed offsite. The lysimeters were capped in 1995 to prevent further water intrusion and drained for the last time by PNNL in 1996.

A Grout Waste Test Facility (600-259:1 subsite) also operated at the location of the 600-259 waste site between 1985 and 1989, designed to test leaching rates of grout-solidified low-level radioactive waste. The Grout Waste Test Facility consisted of four lysimeters, two of which were never used. All four of the lysimeters were removed in September 1994. Samples collected beneath the lysimeters after removal indicated that residual contaminant levels were at background levels for radionuclides.

##### **4.317.2 Excavation Operations**

Remedial action at the 600-259 site was conducted from September 2004 to July 2005. Excavation of the site included the removal of all caisson structures and radioactive waste forms. Overburden material was segregated and stockpiled for possible use as backfill material pending the results of verification sampling. No anomalies were identified within the bulk soil and debris during remedial activities, and no indications of liquid waste migration beyond the caisson units were observed. Approximately 950 metric tons (1,050 US tons) of material was removed for disposal at ERDF.

Radiological surveys were performed in June 2005 after excavation operations were substantially complete at the 600-259 waste site. The survey results identified residual cesium-137 contamination requiring additional site excavations in July 2005. Following completion of these remedial activities, new surveys were conducted in July 2005.

**4.317.3 Verification Sampling**

Final cleanup verification samples were collected from the excavated area on August 23, 2005, and from the overburden stockpiles on September 21, 2005. Based on the overall footprint of the area and depth of excavation, the 600-259 waste site was classified as one shallow zone decision unit with one overburden decision unit. Each verification sample was collected as a composite sample formed by combining soil collected at four random locations within the sampling area.

**4.317.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed at ERDF. The remaining soil at the 600-259 site has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by an unrestricted land use scenario and that residual concentrations throughout this site pose no threat to groundwater or the Columbia River. This site has no deep zone; therefore no institutional controls are required. The 600-259:1 and 600-259:2 subsites have been reclassified to “Final Closed Out.”

**4.318 600-265, UNIDENTIFIED PIPES NEAR THE 618-10 BURIAL GROUND**

The 600-265 waste site includes two, 5-cm (2-in.)-diameter stainless-steel pipes protruding approximately 10 cm (4 in.) from the ground. The pipes are approximately 1.5 m (5 ft) apart. Each stainless-steel pipe has a rusted pipe inserted in the center that extends approximately 0.6 m (2 ft) above ground. There are no signs to identify the purpose for the pipes. The pipes appear to have been used for subsurface sampling or characterization. The 600-265 waste site has been classified as “Not Accepted.”

**4.319 600-290:1, CONTAMINATED CONCRETE FOUNDATION WEST OF 618-13, PAD AND LOADING DOCK****4.319.1 History**

Adjacent to the 618-13 Burial Ground was a concrete pad and loading dock on which was stored solvents in 208-L (55-gal) barrels. Although the loading dock is part of the 600-290, Contaminated Concrete Foundation West of 618-13, 300 West Storage waste site, the concrete loading dock was within the excavation area of the 618-13 Burial Ground and was removed during remediation of the 618-13 site. The concrete loading dock is also known as the 600-290:1 Pad and Loading Dock Near 618-13 and was included within the footprint of the 618-13 cleanup verification sampling plan. The 600-290:1 subsite has been used for the storage of depleted solvents that were subsequently buried in the nearby 618-9 burial ground.

**4.319.2 Excavation Operations**

Field remediation of the 618-13 Burial Ground (including 600-290:1) occurred between January 5 and February 2, 2009, to remove the mound, concrete pad, and loading dock. The excavated material was maintained within the waste site footprint; therefore, no staging piles were generated outside of the waste site boundary. Contaminated soil, pieces of decayed wood, and concrete were the only materials found during remediation of the site. Approximately 3,132 BCM (4,097 BCY) of soil weighing 4,300 metric tons (4,742 tons) was excavated and disposed of at ERDF.

**4.319.3 Verification Sampling**

Following remediation and field-screening of the 618-13 Burial Ground (including 600-290:1), verification sampling was conducted in February 2009. The number of decision subunits was determined by the overall footprint area of the decision unit, with the default number of verification samples for each decision unit being four composite samples. The footprint included the area beneath the 618-13 Burial Ground mound, the concrete pad and loading dock, and the surrounding soils that contacted the waste during loadout. The total area was small ( $<9,290 \text{ m}^2$  [ $100,000 \text{ ft}^2$ ]) and, therefore, required only a single decision subunit. In addition to performing statistical sampling of the remedial footprint, two focused soil samples were collected within the excavation footprint: beneath the 618-13 Burial Ground and beneath the concrete pad and loading dock. These locations were chosen to ensure that samples were obtained directly beneath these two features.

**4.319.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed at ERDF. The remaining soil at the 618-13 and 600-290:1 sites have been sampled, analyzed, and evaluated. Results indicated that the site supports future land uses that can be represented (or bounded) by the residential land use scenario and poses no threat to groundwater or the Columbia River. Both sites are closed to shallow zone criteria and, therefore, do not require any institutional controls. The 600-290:1 subsite has been reclassified to “Final Closed Out.”

**4.320 600-290:2, 300 WEST STORAGE AREA****4.320.1 History**

The 600-290:2 subsite consisted of the remaining areas within the 600-290 waste site boundary, exclusive of the interim closed out 618-13 Burial Ground waste site and the 600-290:1 subsite. The majority of the 600-290:2 area was enclosed by a fence and was used for storage of contaminated equipment.

**4.320.2 Confirmatory Sampling**

Confirmatory sampling for the 600-290:2 subsite was conducted on April 3, 2012. Because there was little at the 600 290:2 subsite to use as a basis for a focused sampling design, a statistical sampling design was chosen. Twelve statistical discrete soil samples were collected on the grid within the footprint of the site.

**4.320.3 Statement of Protectiveness**

Confirmatory sampling was performed, and the analytical results indicate that the residual concentrations of COPCs at this site meet the remedial action objectives for direct contact, groundwater protection, and river protection. These results also indicate that residual concentrations will support future land uses that can be represented (or bounded) by a rural-residential scenario and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River. Institutional controls to prevent uncontrolled drilling or excavation are not required. The 600-290:2 subsite has been reclassified to “Final No Action.”

**4.321 600-352-PL, PIPELINE FROM 342 SUMP TO 310 FACILITY; 300 AREA RETENTION/TRANSFER SYSTEM (RTS) AND PIPELINE**

The site includes the underground 25-cm (10-in.)-diameter high density polyethylene pipeline, the 342 sump, and the active portions of the 310 facility. Portions of the 310 facility were demolished and closed. The remaining, active portions of the original facility were reconfigured to accept process sewer effluent from the 325 laboratory operations. The active piping and lift station components became part of the 600-352-PL waste site. The active components include M0-745, one drum storage area, two diversion tanks, and one equalization tank. The second drum storage area was converted to a truck unloading station, which were all included in the Rejected 600-117 waste site. In July 2013, 600-352-PL waste site was transferred the 300-15:2 pipeline waste subsite. The 600-352-PL waste site is part of the 300-15:2 and should not have been classified as a separate site. Therefore, the 600-352-PL waste site has been reclassified as “Consolidated.”

**4.322 600-357, GEOPHYSICAL TESTING PIT #2 NEAR 618-10**

The 600-357 waste site consists of a geophysical test bed near 618-10, constructed in 1981 by PNNL. The test bed was constructed by excavating the ground to form a depression approximately 61 m (200 ft) long by 15 m (50 ft) wide. The depression was filled to grade with the excavated soils after the targets were buried in the test bed. The surface remained indistinguishable from the surrounding terrain except for the lack of vegetation. The 600-357 waste site has been reclassified to “Not Accepted.”

**4.323 600-366, PNNL GEOPHYSICAL TEST SITE WEST OF 300 AREA**

The 600-366 waste site is a geophysics burial test site containing nine buried inert objects ranging from near surface to 4.2 m bgs and two acoustic boreholes. The site was used to test metal detectors on a variety of metal targets with a wide range of shapes and sizes. The 600-366 waste site has been reclassified to “Not Accepted.”

**4.324 600-367, BURIAL PIT NEAR THE GEOTECHNICAL ENGINEERING AND DEVELOPMENT FACILITY****4.324.14 History**

The 600-367, Burial Pit Near the Geotechnical Engineering and Development Facility waste site was located approximately 100 m (328 ft) north of the Hanford Geotechnical Engineering and Development Cold Test Facility. The waste site consisted of a pit that was excavated to bury the remains of a trailer and equipment that were destroyed during a Hanford Site range fire in the 1980s.

**4.324.2 Excavation**

Remedial action at the 600-367 waste site began on January 23 and continued through February 2, 2015. The remediation extended to an estimated maximum depth of 2.6 m (8.5 ft) below ground surface resulting in 810 BCM (1,059 BCY) of contaminated soil and debris being removed and disposed at ERDF. The debris consisted of a metal trailer frame, plastic, fiberglass insulation, three empty drums, an empty 19-L (5-gal) bucket, and an empty compressed gas cylinder. The empty cylinder was sent to recycling.

**4.324.3 Verification Sampling**

Verification sampling at the 600-367 waste site was performed on April 30, 2015. One decision unit was identified for the 600-367 waste site. The decision unit is comprised of a combination of statistical and focused verification soil samples. The excavation area footprint of the 600-367 waste site was used as the basis for the location of a random start systematic grid for verification soil sampling. Twelve statistical soil sample locations were collected. In addition to the statistical sample locations, one focused sample location was identified at the location where the anomalous material was found.

**4.324.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed of at ERDF. The remaining soil at the 600-367 waste site has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the residential land use scenario and poses no threat to groundwater or the Columbia River. Because the waste site was remediated to achieve CULs for residential land use, institutional

controls are not required. The 600-367 waste site has been reclassified to a status of "Final Closed Out."

#### **4.325 618-1:1, 333 ESHTSSA, 333 EAST SITE HEAT TREAT SALT STORAGE AREA; AND 618-1:2, LIMESTONE NEUTRALIZATION PIT(S), WATS TRENCH NEUTRALIZATION PIT(S)**

##### **4.325.1 History**

The 618-1:1, 333 ESHTSSA subsite used to store containers of solidified heat-treat salt waste from the fuels fabrication facility. The site included various locations inside the 333 fence where heat-treat salts were stored. The waste consisted of sodium chloride, potassium chloride, sodium nitrite, sodium nitrate, and potassium nitrate. Approximately thirty to fifty 208-L (55-gal) drums accumulated each year from 1964 to 1987. Afterwards it was an open paved area near the southeast corner of the 333 Building. Several areas of the asphalt pavement had been painted over and posted fixed radiological contamination. These areas were incorporated into the 618-1 Burial Ground site as 618-1:1. Part of the 618-1:1 waste site was within the excavation boundary of the UPR-300-17 site and was closed out with the UPR 300-17 waste site.

The 618-1:2, limestone neutralization pit received drainage from the WATS pipe trench and the 334 Tank Farm sump trench that was connected to the pipe trench. The pit was filled with limestone rocks that were used to neutralize acidic aqueous solutions draining from the pipe trench. The pit had an open top to allow the addition of limestone rocks as needed. It was open at the bottom to drain to the soil column of the 618-1 Burial Ground located beneath the pit. This site was incorporated into the 618-1 Burial Ground site as 618-1:2.

##### **4.325.2 Excavation Operations**

Field remediation activities at the 618-1 Burial Ground were performed between September 17, 2008, and September 10, 2009. Approximately 47,332 metric tons (52,160 US tons) of soil and debris was excavated and disposed of at ERDF. There was no soil that was excavated that will be used as clean, uncontaminated backfill. Excavated material from the 618-1 Burial Ground consisted of contaminated soil and a variety of miscellaneous debris. Waste encountered during excavation of the 618-1 waste site consisted mostly of contaminated soil, metal pipe, crucibles, laboratory glassware, empty metal containers, and some LDR material. Twenty metal drums containing personal protective equipment were removed from the trenches. The personal protective equipment was about 80% decomposed. Several bottles containing liquid and/or powder were also removed. One relatively large area on the south side of the burial ground was stained yellow, presumably from one of the acid leaks known to have occurred at the site.

**4.325.3 Verification Sampling**

Following remediation and field screening of the 618-1 Burial Ground, verification sampling was conducted on January 26 and 27, 2010. Statistical verification sampling was performed at the 618-1 Burial Ground waste site to demonstrate that the residual soil in the waste site meets the industrial land use scenario remedial action objectives. Each statistical verification sample consists of a composite of sample material from four designated random sample locations within each decision subunit. The number of decision subunits was determined by the overall footprint area of the decision unit, with the default number of verification samples for each decision unit being four composite samples. The 618-1 Burial Ground has both a shallow zone decision unit and a deep zone decision unit. Each composite sample was formed by combining soil collected at four randomly selected nodes within each sampling area. Sample locations were determined using an automated sample design program that generates random sample locations based on the footprint of the excavated waste site.

Three focused sample locations were selected to assess cleanup of the yellow stained area. One focused sample location was selected to assess cleanup in the area of the only GPERS gamma survey. Fifteen focused sample locations were selected to assess cleanup in areas where GPERS beta surveys indicate greater than twice background. Two focused sample locations were selected to assess cleanup in two areas where in-process soil sample results for uranium-238 were greater than the cleanup level.

**4.325.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed of at ERDF. The remaining soil at the 618-1 site has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land use scenario and poses no threat to groundwater or the Columbia River. Institutional controls are required to prevent drilling or excavation into the deep zone. The 618-1:1 and 618-1:2 subsites have been reclassified to “Final Closed Out.”

**4.326 618-2, SOLID WASTE BURIAL GROUND NO. 2, 318-2****4.326.1 History**

The 618-2 waste site consisted of three east-west oriented trenches. The 618-2 Burial Ground was reported to have been in operation from 1951 to 1954, primarily for the disposal of contaminated equipment, materials, and laboratory waste from the 300 Area Facilities. Radiological contaminants were reported to include uranium, plutonium, and mixed fission products. The uranium waste was reportedly solid metal (uranium oxide) cuttings from reactor fuel fabrication facilities in the 300 Area.



**4.326.2 Excavation Operations**

Remedial action activities at the 618-2 waste site initially began in November 2004 and were completed in August 2006. Excavation and load-out operations were suspended from December 2004 to December 2005, due to the discovery of higher than anticipated levels of plutonium-contaminated waste. The buried waste consisted primarily of a wide variety of laboratory and construction-type debris. Excavation activities found no indication of bulk liquid waste disposal at this waste site. During the initial excavation phase, contaminated soil and debris were excavated from the burial ground and transported to a designated “stockpile” area for sorting and sampling. Sorting and sampling of the excavated soil and debris was performed in a designated staging pile area. This staging pile area supported the 618-2, 618-3, and 618-8 Burial Ground excavations and is included with the closure of the 618-2 waste site. All excavated materials were disposed of at ERDF. Approximately 71,203 metric tons (78,488 US tons) of material from the site was removed and disposed of at ERDF.

**4.326.3 Verification Sampling**

Final cleanup verification samples were collected on September 6 and 7, 2006. Each verification sample was a composite formed by combining soil collected at four randomly selected nodes within each sampling area. The 618-2 Burial Ground verification sampling events involved four decision units including a shallow zone, deep zone, overburden soil stockpile, and staging pile/decontamination pad footprint. The number of decision subunits was determined by the overall footprint area of the decision unit, with the default number of verification samples for each decision unit being four composite samples.

**4.326.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed of at ERDF. The remaining soil at the 618-2 site has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land use scenario and poses no threat to groundwater or the Columbia River. Institutional controls are required to prevent drilling or excavation into the deep zone. The 618-2 waste site has been reclassified to “Final Closed Out.”

**4.327 618-3, SOLID WASTE BURIAL GROUND NO. 3, 318-3, BURIAL GROUND #3, DRY WASTE BURIAL GROUND NO. 3****4.327.1 History**

The 618-3 Solid Waste Burial Ground waste site, also referred to as Burial Ground Number 3 and Dry Waste Burial Ground Number 3, consisted of one north-south-trending trench approximately 105.2 m (345 ft) long, 30.5 m (100 ft) wide, and 4.6 m (15 ft) deep. The burial ground was operated from 1954 to 1955 for the disposal of uranium-contaminated construction

debris from the 311 Building and construction/demolition debris from remodeling of the 313, 303-J, and 303 K Buildings.

#### **4.327.2 Excavation Operations**

Remedial action activities at the 618-3 waste site were conducted from September 9, 2004, to October 28, 2004. The buried waste consisted primarily of a wide variety of construction-type debris. Excavation activities found no indication of bulk liquid waste disposal at this waste site. Land disposal restriction materials, primarily consisting of lead solids, were identified and separated from the bulk soil and debris during excavation and sorting operations. Sorting and sampling of the excavated soil and debris was performed in a designated staging pile area. This staging pile area supported the 618-2, 618-3, and 618-8 Burial Ground excavations and was closed out with the 618-2 waste site. No overburden piles were created during the waste site excavation. All excavated materials were disposed at ERDF. Approximately 30,878 metric tons (34,037 US tons) of material from the site was removed and disposed at ERDF.

#### **4.327.3 Verification Sampling**

Final cleanup verification sampling was conducted on January 31, 2006. Based on the overall footprint of the area and depth of excavation, the 618-3 site was classified as one shallow zone decision unit. Four verification samples were collected at the 618-3 Burial Ground. Each verification sample was collected as a composite sample formed by combining soil collected at four random locations within the remediation footprint.

#### **4.327.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed at ERDF. The remaining soil at the 618-3 site has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land use scenario and poses no threat to groundwater or the Columbia River. This site has no deep zone; therefore, no institutional controls are required. The 618-3 waste site has been reclassified to "Final Closed Out."

### **4.328 618-5, BURIAL GROUND NO. 5, REGULATED BURNING GROUND, 318-5**

#### **4.328.1 History**

The 618-5 waste site was a single disposal trench oriented northeast to southwest and measured approximately 56 m (184 ft) by 96 m (315 ft), and about 6 m (19.7 ft) deep. Prior to excavation, little information was available on the inventory and source of waste deposited in the 300 Area burial grounds. During the late 1940s and throughout the 1950s, numerous activities were conducted in the 300 Area to support fuel fabrication and process development. The 618-5 Burial Ground trench reportedly operated from 1945 through 1962 as a burn pit, as well as a storage area for aluminum silicate containing 17% uranium and bronze crucibles with reported

radiation levels up to 200 mrem/hr. The site was also used for disposal of uranium-bearing trash and uranium-bearing organic wastes. It was unknown if liquid waste materials were disposed of in the 618-5 Burial Ground.

#### **4.328.2 Excavation Operations**

Excavation and sorting operations at the 618-5 Burial Ground was initiated in October 2002 and were completed in March 2003. Approximately 46,300 metric tons (50,930 tons) of bulk soil and debris were excavated from the site, put into adjacent staging pile areas, and subsequently transported to ERDF for disposal. Shipment of all project drummed waste to ERDF was completed in May 2003. The remainder of stockpiled soil and debris from excavation operations was loaded from the staging pile areas into containers and transported to ERDF intermittently between March 2003 and August 2003.

#### **4.328.3 Verification Sampling**

Final cleanup verification samples were collected in September 2003. The 618-5 Burial Ground verification sampling event involved five decision units consisting of the shallow zone and deep zone (excavated pit), overburden soil stockpile, and west and south staging pile areas. The number of samples collected within each decision unit was determined by the overall footprint area. Each verification sample was a composite of four soil aliquots collected from random locations within the decision subunits

#### **4.328.4 Statement of Protectiveness**

Residual soil at the 618-5 Burial Ground has been sampled, analyzed, and modeled. Results indicate the site supports future land uses that can be represented (or bounded) by the industrial land use scenario and poses no threat to groundwater or the Columbia River. Because residual soil concentrations indicated that CULs for more stringent land uses may have been achieved for the 618-5 Burial Ground, a supplemental evaluation was performed against the unrestricted land use cleanup objectives. Results of the evaluation demonstrate that remedial actions at the site have achieved all of the objectives for unrestricted land uses. Consequently, no institutional controls are required at the site. The 618-5 waste site has been reclassified to “Final Closed Out.”

#### **4.329 618-6, SOLID WASTE BURIAL GROUND #6,**

The 618-6 waste site burial ground no longer existed in the 300 Area. Its contents were dug up and relocated twice to allow for 300 Area construction expansions. In 1962 the waste was permanently moved to the 618-10 Burial Ground. The 618-6 Burial ground was originally located in the southeast corner of the 300 area near where the 325 Building is now located. Prior to construction of the 325 Building in 1951 the contents of the burial ground were moved to a location south of the 316-1 Pond. In 1962 the material was moved to the 618-10 Burial Ground

to allow for construction of the 324 Building. The 618-6 waste site has been reclassified to “Rejected.”

### **4.330 618-7, SOLID WASTE BURIAL GROUND NO. 7, BURIAL GROUND #7, 318-7**

#### **4.330.1 History**

The 618-7 Burial Ground, also known as Solid Waste Burial Ground No. 7, Burial Ground No. 7, and 318-7, consisted of three east-west-oriented trenches. The northern and middle trenches were located adjacent to one another and were collectively referred to as the main trench for the remediation. Each trench was assumed to be covered with 0.6 to 3 m (2 to 9 ft) of fill material. The 618-7 Burial Ground was in operation from 1960 to 1973, primarily for the disposal of contaminated equipment, materials, and laboratory waste from the 300 Area facilities including the 313, 321, 333, 3722, and 3732 Buildings. The middle trench operated between 1960 and 1966 after which the north and south trenches were opened. The primary radiological contaminants were uranium and thorium.

#### **4.330.2 Excavation Operations**

Remedial action activities at the 618-7 Burial Ground began January 4, 2008, and were completed on November 15, 2008. A total of 117 drums containing Zircaloy turnings were recovered from the thoria trench. The turnings had been packaged in plastic bags containerized in 114 L (30 gal) drums. Most of the turnings were submerged in a milky white, water-soluble cutting oil. Approximately 20 stainless steel tanks (2 to 3 m [8 to 10 ft] in diameter and 1 to 3 m [4 to 10 ft] in length) and a solvent extraction column (1 m [3 ft] in diameter and 9 m [30 ft] tall) were also recovered from the thoria trench. Several of the tanks contained cooling coils filled with an ethylene glycol solution. Process furnaces and hundreds of empty 19 L (5 gal) buckets from the thoria target fabrication line that was located in the 3722 Building were also found in the thoria trench. Approximately 50 drums containing different types of oil were removed. Approximately 200 bottles ranged in size from 100 mL to 20 L (5.28 gal) were recovered from the three trenches.

Waste encountered during excavation of the 618-7 Burial Ground trenches was consistent with the types of material anticipated based on its reported use for disposal of contaminated equipment from the 300 Area Facilities and “hundreds” of drums of Zircaloy chips. A total of 117 drums containing Zircaloy and water-soluble oil were removed. Because these drums contained PCBs and other contaminants, they were sent to an offsite treatment facility. Approximately 18,140 metric tons (20,000 US tons) of aluminum turnings and solids contained lead above LDR level and required solidification prior to disposal at ERDF.

Although the final gamma energy GPERS did not detect any areas with radiation at greater than two times background in the 618-7 trenches, several radiological “hot spots” requiring additional remediation were identified using the beta energy GPERS in the main trench. Additional remediation was performed targeting “hot spot” locations.

Excavation was performed until native soil was reached at the floor of each trench. The determination of native soil was based on the absence of debris materials, radiological surveys, and visual observations of the soil at the base of the excavation. In total, approximately 160,920 metric tons (177,380 US tons) of material from the site was removed and disposed.

#### **4.330.3 Verification Sampling**

Following remediation and field-screening of the 618-7 Burial Ground, verification sampling was conducted between September and November 2008. The 618-7 Burial Ground verification sampling covered a total of four decision units including the main trench, main trench expansion, thoria trench, and the drum handling area footprint. The main trench includes both the north and middle trenches of the burial ground while the thoria trench covered only the south trench. The trenches were excavated to a depth of approximately 6 m (20 ft) but were considered shallow zone decision units for site closeout.

The four decision units and their respective required number of verification samples. These sample locations were determined using an automated sample design program that generates random sample locations based on the footprint of the excavated waste site. Each composite sample was formed by combining soil collected at four randomly selected nodes within each sampling area. Twelve discrete focused soil samples and one judgmental soil sample were collected to assess area-specific residual contamination within the 618-7 Burial Ground excavation.

#### **4.330.4 Statement of Protectiveness**

The remaining soil at the 618-7 site has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the residential land use scenario and poses no threat to groundwater or the Columbia River. The entire site is closed to shallow zone criteria and, therefore, does not require any institutional controls. The 618-7 waste site has been reclassified to “Final Closed Out.”

### **4.331 618-8, SOLID WASTE BURIAL GROUND NO. 8, 318-8, EARLY SOLID WASTE BURIAL GROUND**

#### **4.331.1 History**

The 618-8 solid waste burial ground was reported to be a rectangular shaped area approximately 183 m (600 ft) long by 31 m (100 ft) wide. The waste site was believed to include the area under the parking lot, because when the North Parking Lot was constructed (sometime in the early 1950s), and brass medallions were placed in the asphalt to delineate the presence of an Underground Contaminated Material Area. The waste site was also believed to include the area north of the parking lot because this area was delineated by “post and chain” boundary markers with signs identifying it as an Underground Contaminated Material Area. Results of the

investigation indicated that the radiological contamination was found primarily within established “post and chain” boundaries associated with the area located north of the parking lot. The radiological contamination identified in this investigation consisted exclusively of uranium isotopes, primarily uranium-235 and uranium-238.

#### **4.331.2 Excavation Operations**

Remedial action activities at the 618-8 waste site began on November 1, 2004, and were completed on November 8, 2004. Remediation involved excavation and staging of clean overburden material and removal of contaminated soil. Sorting and sampling of the excavated soil and debris was performed in a designated staging pile area. The staging pile area used for the 618-8 waste site also supported the 618-2 and 618-3 Burial Ground excavations and will be closed out with the 618-2 waste site.

In December 2004, load-out operations at the 618-8 Burial Ground staging piles were suspended, due to the discovery of plutonium-contaminated waste at the 618-2 Burial Ground. As part of mitigation actions to stabilize excavated waste and debris from 618-2 Burial Ground, a soil cover was placed on all stockpiled material from the 618-8 Burial Ground. Load-out of the 618-8 stockpiled material resumed on September 1, 2005, and was completed on September 13, 2005. Approximately 6,462 metric tons (7,125 US tons) of material from the site was removed and disposed at ERDF.

Post-excavation radiological surveys of the 618-8 waste site floor were performed in December 2005. The field radiological measurements survey results did not identify any residual radiological contamination above background levels.

#### **4.331.3 Verification Sampling**

Final cleanup verification sampling was conducted on January 31, 2006. Based on the size of the remediation footprint, the 618-8 shallow zone decision unit is comprised of one decision subunit, divided into four sampling areas. All sampling areas were further divided into 16 sampling nodes. Each verification sample was composed of four composite samples formed by combining soil collected from four randomly selected locations within each sampling area.

#### **4.331.4 Statement of Protectiveness**

The remaining soil at the 618-8 waste site has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the residential land use scenario and poses no threat to groundwater or the Columbia River. The site has no deep zone; no institutional controls are required at the 618-8 waste site. The 618-8 waste site has been reclassified to “Final Closed Out.”

**4.332 618-9, 300 WEST BURIAL GROUND, 318-9, DRY WASTE BURIAL SITE NO. 9**

The 618-9 waste site was a burial ground composed of a single trench and enclosed within a fence measuring 105 by 95 m (344 by 312 ft). In 1991, this burial ground was excavated. Approximately 2,600 L (700 gal) of methyl isobutyl ketone, and 3,400 L (900 gal) of kerosene solvent were recovered from 120 drums in the trench's western end. The kerosene solvent was normal paraffin hydrocarbon and tributyl phosphate. Severely corroded drums were also found at the eastern end of the trench. Approximately 39.6 m<sup>3</sup> (1,400 ft<sup>3</sup>) of debris was also found, including more than 80 empty drums, a wheelbarrow, scrap process equipment, construction debris, two breached bags of ammonium nitrate, unidentified white powders, and several lead bricks. Debris and soil were removed to the 200 Area Low level Radioactive Burial Ground. Liquid wastes were sent to licensed offsite waste handling facilities.

After removal of all drums, scrap process equipment, and debris, the soil of the empty trench was sampled and analyzed for organic and inorganic chemicals, metals, radioactive materials, and pesticides. Soil gas testing was performed to determine if organic vapors remained in the soil. No contaminants were found at concentrations above risk-based standards so the trench was backfilled and revegetated. The 618-9 waste site has been reclassified to "Final Closed Out."

**4.333 618-13, 318-13, 303 BUILDING CONTAMINATED SOIL BURIAL SITE****4.333.1 History**

The 618-13 Burial Ground consisted of a mound of soil approximately 4.6 to 6.1 m (15 to 20 ft) high by 38 m (125 ft) long by 15 m (50 ft) wide covered with 0.6 m (2 ft) of clean soil. Adjacent to the west side of the 618-13 mound was the 600-290:1 pad and loading dock that were used for storage of solvents contained in 208 L (55-gal) drums and were part of the 600-290 waste site. The concrete pad and loading dock were remediated with the 618-13 mound and their footprint was included in the 618-13 cleanup verification sampling plan.

The 618-13 site was first identified in 1955 during an inventory of buried radioactive wastes in the 300 Area. The top soil from the 303 Area removed in 1950 was piled approximately one-half to three-quarters of a mile northwest of the 300 Area and covered with 0.6 m (2 ft) of clean soil. The mound of covered contaminated material has been posted as a "radiation zone."

**4.333.2 Excavation Operations**

Field remediation of the 618-13 Burial Ground occurred between January 5 and February 2, 2009, to remove the mound, concrete pad, and loading dock. The excavated material was maintained within the waste site footprint; therefore, no staging piles were generated outside of the waste site boundary. Contaminated soil, pieces of decayed wood, and concrete were the only materials found during remediation of the site. Approximately 3,132 BCM (4,097 BCY) of soil weighing 4,300 metric tons (4,742 US tons) was excavated and disposed of at ERDF.

**4.333.3 Verification Sampling**

Following remediation and field-screening of the 618-13 Burial Ground, verification sampling was conducted in February 2009. The number of decision subunits was determined by the overall footprint area of the decision unit, with the default number of verification samples for each decision unit being four composite samples. The footprint included the area beneath the 618-13 Burial Ground mound, the concrete pad and loading dock, and the surrounding soils that contacted the waste during loadout. The total area was small, therefore, required only a single decision subunit. In addition to performing statistical sampling of the remedial footprint, two focused soil samples were collected within the excavation footprint: beneath the 618-13 Burial Ground and beneath the concrete pad and loading dock. These locations were chosen to ensure that samples were obtained directly beneath these two features.

**4.333.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed at ERDF. The remaining soil at the 618-13 and 600-290:1 sites have been sampled, analyzed, and evaluated. Results indicated that the site supports future land uses that can be represented (or bounded) by the residential land use scenario and poses no threat to groundwater or the Columbia River. Both sites are closed to shallow zone criteria and, therefore, do not require any institutional controls. The 618-13 waste site has been reclassified to “Final Closed Out.”

**4.334 3712 USSA, 3712 URANIUM SCRAP STORAGE AREA, 3712 BUILDING  
URANIUM SCRAP STORAGE AREA, 3712 FUELS WAREHOUSE****4.334.1 History**

The 3712 USSA waste site was a metal building built in 1961 and used to store uranium fuel elements, fuel fabrication components, and uranium scraps from the 313 Building and 333 Building fuel fabrication efforts. It was a steel frame structure with metal siding and a metal roof. The building had a concrete floor and foundation.

**4.334.2 Excavation Operations**

Demolition of the above-grade 3712 Building structure was completed in January 2006 and remedial action of the 3712 USSA waste site, including the 3712 Building slab and foundation, was performed between June 3 and 15, 2010. The waste site was excavated to a depth ranging from approximately 1 to 1.5 m (3.3 to 4.9 ft) bgs, resulting in approximately 999 BCM (1,307 BCY) or 2,167 metric tons (2,388 US tons) of building slab and foundation debris and soil disposed at ERDF. All material was direct loaded from the excavation; therefore, no waste staging piles were created. No overburden soil stockpiles were associated with the waste site.



**4.334.3 Verification Sampling**

Verification sampling for the 3712 USSA waste site was conducted January 31, 2011. The excavation footprint is the only decision unit identified for the 3712 USSA waste site for verification sampling. Twelve statistical soil samples were collected on the grid within the excavation footprint at the site.

**4.334.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed at ERDF. The remaining soil at the 3712 USSA have been sampled, analyzed, and evaluated. Results indicated that the site supports future land uses that can be represented (or bounded) by the residential land use scenario and poses no threat to groundwater or the Columbia River. The results of verification sampling do not preclude any future uses (as bounded by the rural-residential scenario or the industrial land use scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 m [15 ft] deep). The 3712 USSA waste site has been reclassified to “Final Closed Out.”

**4.335 3713 PSHWSA, 3713 PAINT SHOP HAZARDOUS WASTE SATELLITE AREA**

The 3713 PSHWSA waste site was a hazardous waste satellite accumulation area until 1987. There was a drain in the center of the pad. Items stored in this area included nonhazardous materials, such as ladders, hoses, and pipe. The 3713 Building was being used as a carpenter’s shop. The unit temporarily stored small quantities of hazardous waste. The waste was derived from paint shop operations. Active 90-day waste storage areas and dangerous waste satellite accumulation areas and their locations are maintained as part of the operating record for the facility; therefore, the 3713 PSHWSA waste site has been reclassified to “Rejected.”

**4.336 3713 SSHWSA, 3713 SIGN SHOP HAZARDOUS WASTE SATELLITE AREA**

The 3713 SSHWSA waste site consisted of a staging area located outside the north entrance of the 3713 Building. The staging area accumulated small quantities of nonsolvent waste from sign shop operations. The unit was associated with the 3713 Sign shop. The 3713 Building was a carpenter’s shop. Hazardous wastes were no longer staged at the facility and no discolored soil was present at the reported location of this unit. In addition, active 90-day waste storage areas and dangerous waste satellite accumulation areas and their locations are maintained as part of the operating record for the facility; therefore, the 3713 SSHWSA waste site has been reclassified to “Rejected.”

**4.337 3746-D SR, 3746-D SILVER RECOVERY, 3746-D SILVER RECOVERY PROCESS**

The 3746-D Silver Recovery unit is a piece of equipment that was located in the 3746-D Building, a Quonset hut. The unit was used to recycle corrosive, silver-bearing photochemical wastes generated by PNNL Photo Processing Operations. During 1993, 7,721 L (2,040 gal) of photochemical waste was processed to recover 209.2 kg (1,139.686 troy ounces) of silver. The 3746-D Silver Recovery unit was removed with the demolition of the 3746D Building in May 2006 and disposed of at ERDF. The 3746-D SR waste site was reclassified to “Rejected.”

**4.338 UPR-300-1, 316-1A, 307-340 WASTE LINE LEAK, UN-300-1**

The UPR-300-1 waste site was a release to the soil in the area between the 307 Retention Basins and the 340 Building. A long duration leak was discovered in the cast iron transfer line between the 307 Retention Basins and the 340 Vault. A corroded section of pipe discharged approximately 900 curies of relatively short-lived radionuclides (including 10 curies each of strontium-90 and cesium-137) to the soil column over a period as long as a year. Investigation suggested that the cause of the corrosion was RLWS waste backing up into the section of transfer line near a pipe junction. The UPR-300-1 waste site was immediately adjacent to the 340 facility and associated 340 Complex waste site. Demolition of the facility and remediation of the 340 Complex waste site included the area of UPR-300-1 waste site; therefore, the UPR-300-1 was “Consolidated” with the 340 Complex waste site.

**4.339 UPR-300-2, RELEASES AT THE 340 FACILITY, UN-300-2, UN-316-2**

The UPR-300-2 waste site was the result of multiple releases from ongoing decontamination and waste handling activities starting in January 1954, which affected the soil around the 340 facility. UPR-300-2 affected the soil within 3 to 6 m (10 to 20 ft) of the north, east, and south walls of the 340 Building and below-grade vault. Several leaks occurred that contributed significant amounts of radioactivity to the soil around the 340 Building.

Soil contamination that extended several feet down adjacent to the 340 Building south wall suggested that the sump (truck tanker loadout) overflowed when tanker trucks were being used to transfer waste from the waste storage tanks to the 300 Area for disposal. Strontium-90 was identified in the soil with short-lived radionuclides having decayed to undetectable levels by 2014.

The UPR-300-2 waste site was immediately adjacent to the 340 facility and associated 340 Complex waste site. Demolition of the facility and remediation of the 340 Complex waste site included the area of UPR-300-2 waste site; therefore, the UPR-300-2 was “Consolidated” with the 340 Complex waste site.

**4.340 UPR-300-4, UN-300-4, CONTAMINATED SOIL BENEATH THE 321 BUILDING****4.340.1 History**

The UPR-300-4 waste site was associated with operations and processes that occurred in the 321 Building. The history of the 321 Building is one of the most dynamic of all of the Hanford facilities. Originally constructed as a pilot scale plant for testing chemical “process improvements” using unirradiated or low-activity substances, the facility was ultimately used to trouble shoot, research, and develop radioactive processes associated with REDOX, PUREX, RECUPLEX, the Metal Recovery process, and the bismuth phosphate process. Additionally, reactor fuel development and miscellaneous support of the other 300 Area laboratories all took place in the 321 Building.

**4.340.2 Excavation Operations**

Remediation of the UPR-300-4 waste site was conducted between February 22, 2011, and January 16, 2013. The removal of the 321, 321B, 321C, 321D, 323, and 3718 S Building foundations were done in conjunction with the removal activities. Additionally, five steam condensate drywells and storm drains (300-81, 300-82, 300-83, 300-84, and 300-92) located around the 321 Building were completely removed.

Approximately 24,108 BCM (31,532 BCY) of soil, rock, building debris, and piping were removed from the UPR-300-4 excavation. Of that, approximately 1,945 BCM (2544 BCY) was sampled and designated for use as backfill.

As part of the UPR-300-4 excavation, the 323 Building foundation was completely removed. This included emptying the 323 waste tanks and removing all associated debris and potentially impacted soils. Approximately 613,719 L (162,145 gal) of water were removed and disposed to the Effluent Treatment Facility. Approximately 6,623 BCM (8,663 BCY) of soil, rock, building debris, and piping were removed and disposed to ERDF. These materials were disposed of between September 24, 2012, and November 28, 2012.

A decontamination pad located on the west side of the excavation, at the top of the access ramp, was remediated on February 14, 2013. Approximately 0.3 m (1 ft) of soil and rock were removed and disposed to ERDF. This resulted in the removal of approximately 114 tons, or 51.8 BCM (67.8 BCY), of soils.

**4.340.3 Verification Sampling**

Verification sampling for the UPR-300-4 waste site was conducted on March 18 and 19, 2013. The UPR-300-4 waste site consisted of three decision units within the excavation footprint area for verification sampling. The three decision units were the shallow zone, deep zone, and the 323 waste tank area that included the underground piping that connected the waste tanks to the 321 Building. A statistical sampling design was applied to each of these three areas.

Twelve statistical soil samples were collected on the grid within each of the three decision units except for the shallow zone area where 14 statistical samples were collected.

#### **4.340.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed at ERDF. The remaining soil at the UPR-300-4 have been sampled, analyzed, and evaluated. These results show that residual soil concentrations support future land uses that can be represented (or bounded) by an industrial land use scenario and are protective of groundwater and the Columbia River. The UPR-300-4 waste site does not meet the RAGs and RAOs for unrestricted land use; therefore, institutional controls to maintain industrial land use of the site are required. The UPR-300-4 waste site has been reclassified to “Final Closed Out.”

### **4.341 UPR-300-5, UN-300-5, SPILL AT 309 STORAGE BASIN**

#### **4.341.1 History**

The UPR-300-5 waste site was a release that contaminated the storage basin area, the filter vault, the stack base, the truck stall, and the truck ramp outside the 309 Building. The release occurred on August 31, 1973. The 309 Fuel Storage Basin water level was found to be slightly low. Water was added to prevent the exposing walls of the basin from drying and causing possible airborne contamination in the basin room. The operator opened the fill line but became distracted by other activities in the Fuel Basin Storage area. The employees forgot the water supply line was turned on and it was left open overnight. The water filled the basin and began to flow into the overflow drain. The overflow drain line for 309-TW-3 was also connected to the drains that allowed contaminated water to back up into the filler pit, the stack base, and the truck stall. The truck ramp was sloped below the 309 Building grade, which allowed the ramp to fill with 0.68 m (1.5 ft) of water. The problem was first discovered by an employee who observed water leaking out from under the roll-up door in the truck stall. Since the truck ramp extends outside the building, contamination was found both inside and outside the 309 Building.

The waste from the UPR-300-5 waste site unplanned release was low-level radioactive water, with the primary isotope being cesium-137. The smearable contamination within the truck stall and on the floor in the storage basin area were initially reduced by flushing with water to levels up to 25,000 cpm and 10,000 cpm, respectively. Further decontamination efforts reduced these levels to 7,000 cpm and 1,000 cpm, respectively. Airborne concentrations remained normal following the incident. No detectable radioactive stack emissions were revealed by the continuous exhaust air monitoring equipment or the air sampling system in the stack pit.

#### **4.341.2 Excavation Operations**

The 300-22, 300-255, and UPR-300-5 waste sites are related to operations at the 309 Building. The 300-22, 300-255, and UPR-300-5 waste sites excavation along with the demolition of the 309 containment structure was performed from March 12, 2014, to February 12, 2015.

## Construction Activity Summary

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The excavation resulted in removal of approximately 78,120 BCM (102,177 BCY) of contaminated materials. All material was direct loaded for disposal at ERDF. The 300-22, 300-255, and UPR 300 5 waste sites were excavated to a depth of 11 m (36 ft) bgs. Excavated materials consisted of concrete, metal tanks, building debris, asphalt, and various types of piping, including carbon steel, stainless steel, clay tile, and concrete tile. No anomalous materials or stained soils were observed during remedial activities.

### 4.341.3 Verification Sampling

Verification sampling for the 300-22, 300-255, and UPR-300-5 waste sites was performed on April 23 and 27, 2015. The 300-22, 300-255, and UPR-300-5 waste sites verification sampling consisted of four decision units: two deep zone and two shallow zone areas. Twelve statistical soil sample locations were identified in each decision unit.

### 4.341.4 Statement of Protectiveness

The contaminated materials from these sites have been excavated and disposed of at ERDF. The remaining soil at the 300-22, 300-255, and UPR-300-5 waste sites has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the residential land use scenario and poses no threat to groundwater or the Columbia River. Although the 300-22, 300-255, and UPR-300-5 waste sites are in the industrial portion of the 300 Area, the current site conditions achieve the residential land use CULs and RAOs established by the 300 Area ROD. The results of verification sampling show that residual contaminant concentrations meet human health direct exposure CULs for residential land use and applicable standards for groundwater and river protection in the shallow zone (i.e., surface to 4.6 m [15 ft] deep). These sites meet the requirements for unlimited use and unrestricted exposure; institutional controls to maintain industrial land use are not required. The 300-22, 300 255, and UPR-300-5 waste sites have been reclassified to a status of “Final Closed Out.”

## 4.342 UPR-300-7, UN-300-7, OIL SPILL AT 384 BUILDING

The UPR-300-7 release site was the ground and concrete valve pits around the underground day tanks located behind the 384 Building (300 Area Powerhouse). The area was paved with asphalt. There was no visual evidence of a spill. Most of the spilled oil was contained in the underground, concrete pits that surround the day tanks. According to the incident report, the release was discovered at 6:45 a.m. on August 7, 1972. There were two 60,560 L (16,000 gal), underground day tanks on the north side of the 384 Powerhouse. At the time of the release, one day tank was full and one day tank was empty. The operator was instructed to fill the empty tank, but failed to close the valve on the full tank and open the valve to the empty tank. Approximately 3,220 L (850 gal) of #6 fuel oil overflowed from the full day tank during oil transfer from the storage bunker. The spilled oil was retained in the concrete valve pits around the day tanks and in the soil between and around these two adjacent tanks. The UPR-300-7 waste site was remediated and closed out in conjunction with the 316-2 North Process Pond waste site. The UPR-300-7 waste site has been reclassified to “Final Closed Out.”

**4.343 UPR-300-11, UNDERGROUND RADIOACTIVE LIQUID LINE LEAK,  
UN-300-11**

The UPR-300-11 waste site was associated with a flanged tee that connected the east and west legs of the RRLWS to the 340 Facility. Analysis of the contamination in the soil below the tee suggested the effluent was derived from the 325A Building processes.

On October 31, 1977, contamination was found in the soil beneath leaking flanges on a tee section of the RRLWS south of the 340 vault. Excavation around the flanged tee revealed contamination that had been caused by effluent leaking from between the flanges. The leak contaminated a column of soil approximately 1.22 m (4 ft) in diameter and 5.5 m (18 ft) long. The highest dose rate observed was 5 rad per hour. Alpha contamination was also present. At a depth of approximately 7.6 m (25 ft), contamination spread laterally in an interface between the undisturbed soil and backfill.

The UPR-300-11 waste site was immediately adjacent to the 340 facility and associated 340 Complex waste site. Demolition of the facility and remediation of the 340 Complex waste site included the area of UPR-300-11 waste site; therefore, the UPR-300-11 was “Consolidated” with the 340 Complex waste site.

**4.344 UPR-300-13, UN-300-13, ACID NEUTRALIZATION TANK LEAK  
EAST OF 333 BUILDING**

The UPR-300-13 release site was the soil adjacent to the underground spent acid receiver tank that was located east of the 333 Building and adjacent to the 618-1 Burial Ground. The release occurred on July 31, 1973. A chemical operator noted that the liquid level in the 14,383 L (3,800 gal) tank was below the normal pump suction level. It was known that the tank had been previously pumped down to the 4,542 L (1,200 gal) heel on the morning of July 31, 1973. In the afternoon of the same day, 1,805.45 L (477 gal) of liquid waste from the Zircaloy etching tank was added to the heel. The UPR-300-13 waste site was “Consolidated” and dispositioned with the 618-1 waste site.

**4.345 UPR-300-14, UN-300-14, ACID LEAK AT 334 TANK FARM**

The UPR-300-14 release site was to a limestone pit designed to neutralize spilled acid before the acid was released to the underlying ground. On July 18, 1975, a line break in the fill line to Tank No. 32 from the 23,000 L (6,000 gal) #3 high tank in the 334 tank farms caused the loss of 4,540 L (1,200 gal) of 93% sulfuric acid solution. The solution traveled through the concrete trench to the limestone pit that had been designed to neutralize spilled acid. The limestone pit was isolated after this unplanned release. The 334 Tank Farm pipe trench and sump were sealed from the drain line to the limestone pit and connected to the process sewer. The UPR-300-14 waste site was “Consolidated” and dispositioned with the 618-1 waste site.

**4.346 UPR-300-17, UN-300-17, METAL SHAVINGS FIRE****4.346.1 History**

The UPR-300-17 waste site was the location of smoke contamination from a fire caused by rain igniting metal shavings, believed to be uranium, in a garbage can containing oily rags and other waste material. The release occurred on September 2, 1979. The can was inside a plastic-lined wooden burial box, which also caught on fire. Smoke from the fire contaminated a propane tank, a forklift, and a 15-m (50-ft) piece of fire hose located 3 m (10 ft) away. Radiological surveys of proximate features showed low-level contamination. Contamination was limited to the ground around the wooden burial box, with a radius of approximately 3 m (10 ft).

The fire hose and burial box were likely disposed. The propane bottle and forklift were decontaminated and released, and the asphalt in the contaminated area was removed. The asphalt and concrete in the southeastern corner of the 333 Building was painted gray and labeled as a fixed contamination area. The unpainted asphalt east of the fixed contamination area was old and cracked, and there was no clear indication what portion of the asphalt was replaced in 1979.

**4.346.2 Excavation Operations**

Remediation of the waste site was performed from May 5 through May 11, 2009. Approximately 445 metric tons (490 US short tons) of concrete, asphalt, and soil were removed. The soil within the waste site footprint was excavated to a depth of 1 m (3 ft) bgs, and the resulting 195 BCM (255 BCY) of soil was disposed at ERDF.

**4.346.3 Verification Sampling**

Verification sampling for the UPR-300-17 waste site was performed on November 18, 2009. The excavation area footprint was the only decision unit identified for UPR-300-17 waste site verification sampling. The excavation area footprint of the UPR-300-17 waste site was used as the basis for the location of a random-start systematic grid for verification soil sampling. Twelve soil sample locations were collected.

**4.346.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed at ERDF. The remaining soil at the UPR-300-17 have been sampled, analyzed, and evaluated. The results demonstrate that residual contaminant concentrations are protective of groundwater and the Columbia River. The waste site does not have a deep zone or residual contaminant concentrations that would require any institutional controls to prevent uncontrolled drilling or excavation. The UPR-300-17 waste site has been reclassified to “Final Closed Out.”

**4.347 UPR-300-18, UN-300-18, RELEASE AT 321 TANK FARMS**

The UPR-300-18 waste site consisted of a release that occurred on August 27, 1962. In the process of removing a drain plug from a low-level cesium-134 waste line, a pipefitter received general protective clothing contamination up to 10,000 cpm when the solution unexpectedly squirted out of the drain. The main valve had been turned off and the solution in the line was purportedly at near static pressure at the time of the release. The pipefitter immediately replaced the plug and prevented further contamination spread. A follow up inspection by operating personnel revealed that the main valve had failed to seat properly. The fault was corrected and the lines flushed of all foreign solid material. No ground release was mentioned in the report. The UPR-300-18 waste site has been reclassified to “Not Accepted.”

**4.348 UPR-300-31, UN-300-31**

The UPR-300-31 waste site was a release from the drain connections between the 303-F Building and the process sewer. The release consisted of uranium-bearing acid waste containing nitric and sulfuric acid with uranium in solution and chromic acids with copper and zinc in solution. A comparison of UPR-300-31 and UPR-300-40 and their reference documents was performed and concluded that both sites represented the same event. The event was documented under UPR-300-40 waste site code. The UPR-300-31 waste site has been reclassified to “Not Accepted.”

**4.349 UPR-300-38, SOIL CONTAMINATION BENEATH THE 313 BUILDING, 313 SLAB, DEMOLISHED 313 BUILDING FOUNDATION****4.349.1 History**

The UPR-300-38 waste site consisted of contaminated soil beneath the 313 Building, as well as the foundation. The contamination resulted from multiple unplanned release events.

**4.349.2 Excavation Operations**

Remediation of the UPR-300-38 waste site was performed from January 10, 2010, through June 2, 2011. The soil within the northern portion of the waste site footprint was excavated to an approximate average depth of 1 m (3.3 ft) bgs. The southern area of the waste site was excavated to an approximate average depth of 2 m (6.6 ft) bgs, with limited areas of deeper soil contamination to 5 m (16.4 ft) bgs. The resulting 15,204 BCM (19,887 BCY) of soil was disposed at ERDF.

**4.349.3 Verification Sampling**

Verification sampling for the combined UPR-300-38, 313 ESSP, and 300-270 waste sites was conducted on December 16 and 19, 2011, and January 26, 2012. A statistical sampling approach



was utilized for the combined UPR-300-38, 313 ESSP, and 300-270 waste sites excavation. Twelve statistical soil samples were collected from the excavation footprint. In addition, 13 focused soil samples were collected from the areas exhibiting elevated beta activity.

#### **4.349.4 Statement of Protectiveness**

The contaminated materials from UPR-300-38 waste site has been excavated and disposed of at ERDF. The remaining soil at the 300-270 waste sites has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land use scenario and poses no threat to groundwater or the Columbia River. Because this waste site was remediated to achieve CULs for industrial land use, institutional controls to maintain industrial land use are required. The UPR-300-38 waste site has been reclassified to a status of “Final Closed Out.”

### **4.350 UPR-300-39, UN-300-39, SODIUM HYDROXIDE LEAK AT 311 TANK FARM**

#### **4.350.1 History**

The UPR-300-39 waste site was the soil adjacent to the caustic storage tanks in the 311 Tank Farm. A copy of a sheet of handwritten notes refers to “leaking since 1940’s” that “was discovered because a pipe fitter was burned when excavating in the area.” In 1985, concrete containment curbs with catch basins were installed around the tanks to reduce chemical discharge to the soil. Soils around the tanks exhibited high pH, necessitating the use of chemical-resistant suits when excavating in the area.

In February 2006, the 311 Tank Farm and concrete containment were demolished, including the two sodium hydroxide tanks that were labeled “Empty.” The location and extent of the previous leaks of sodium hydroxide were not discernible in the field. The waste consisted of soil containing 50% sodium hydroxide solution. If the sodium hydroxide came into contact with uranium contamination, the resultant contamination will be sodium diuranate (“yellow cake”).

#### **4.350.2 Excavation Operations**

Remediation of the combined 300-40, UPR-300-39, UPR-300-40, and UPR-300-45 waste sites was performed from May 24, 2010, through July 20, 2010. The soil within the waste site footprints was excavated to a depth of 1 m (3.3 ft) bgs, and the resulting 911 BCM (1,192 BCY) of soil was disposed at ERDF.

#### **4.350.3 Verification Sampling**

Verification sampling for the 300-40, UPR-300-39, UPR-300-40, and UPR-300-45 waste sites was conducted December 15 and 16, 2011. Two decision units were identified for verification sampling in the overall excavation footprint. The 300-400 waste site excavation footprint is one decision unit, and the combined UPR-300-39, UPR-300-40, and UPR-300-45 waste site

footprints was the second decision unit. Twelve statistical soil samples were collected from each decision unit.

#### **4.350.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed at ERDF. The UPR-300-39 waste site was evaluated against the criteria established for the residential land use criteria. Results indicate that the site supports future land uses that can be represented (or bounded) by the residential land use scenario and poses no threat to groundwater or the Columbia River. The UPR-300-39 waste site was reclassified to a status of “Final Closed Out.”

### **4.351 UPR-300-40, ACID RELEASE AT THE 303-F PIPE TRENCH, UN-300-40, UPR-300-31, UN-300-31**

#### **4.351.1 History**

The UPR-300-40 waste site was associated with leaks from the drain pipe connections between the 303-F Building and the 300 Area process sewer. The waste consisted of uranium-bearing acid waste containing nitric and sulfuric acid with uranium in solution and chromic acids with copper and zinc in solution.

#### **4.351.2 Excavation Operations**

Remediation of the combined 300-40, UPR-300-39, UPR-300-40, and UPR-300-45 waste sites was performed from May 24, 2010, through July 20, 2010. The soil within the waste site footprints was excavated to a depth of 1 m (3.3 ft) bgs, and the resulting 911 BCM (1,192 BCY) of soil was disposed at ERDF.

#### **4.351.3 Verification Sampling**

Verification sampling for the 300-40, UPR-300-39, UPR-300-40, and UPR-300-45 waste sites was conducted December 15 and 16, 2011. Two decision units were identified for verification sampling in the overall excavation footprint. The 300-40 waste site excavation footprint is one decision unit, and the combined UPR-300-39, UPR-300-40, and UPR-300-45 waste site footprints was the second decision unit. Twelve statistical soil samples were collected from each decision unit.

#### **4.351.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed at ERDF. The UPR-300-40 waste site was evaluated against the criteria established for the residential land use criteria. Results indicate that the site supports future land uses that can be represented (or bounded) by the residential land use scenario and poses no threat to groundwater or the Columbia River. The UPR-300-40 waste site was reclassified to a status of “Final Closed Out.”

**4.352 UPR-300-41, 300 AREA #340 BUILDING PHOSPHORIC ACID SPILL, UN-300-41**

The UPR-300-41 waste site consisted of a sulfuric acid release to the asphalt and soil in the 340 Complex yard. Three drums allegedly containing nitric acid were received from Battelle for use in a charcoal filter efficiency test on April 17, 1986. On June 3, 1986, one of the drums labeled “Sulfuric Acid” was found to have failed. Approximately 114 L (30 gal) of liquid had contaminated part of an asphalt pad and an area of soil next to the pad. The spilled material was neutralized, absorbed, and packed into drums. Contaminated soils were excavated and placed in drums for disposal and the asphalt pad was cleaned. The UPR-300-41 waste site has been reclassified to “Final Closed Out.”

**4.353 UPR-300-42, 300 AREA POWERHOUSE FUEL OIL SPILL, UN-300-42****4.353.1 History**

The UPR-300-42, 300 Area Powerhouse Fuel Oil Spill waste site was the result of an unplanned release of approximately 750 to 1,135 L (200 to 300 gal) of fuel oil north of the north wall of the 384 Powerhouse. The UPR-300-42 waste site was removed during removal of the 384 Powerhouse, which was completed in November 2009. Removal of the UPR-300-42 waste site was verified during the 300-6 waste site remediation activities.

**4.353.2 Excavation Operations**

In November 2010, the project excavated two test pits along the former 384 Powerhouse foundation within the UPR-300-42 waste site. No below-grade structure was noted, and no visible soil staining was observed, as was expected since the site was removed in 2009.

**4.353.3 Verification Sampling**

Verification sampling for the 300-6 and associated waste sites was conducted August 24, 2011. Excavation of the 300-6 waste site extended to the water table; therefore, the vadose zone source of groundwater contamination has been removed to mitigate current and future impacts. The sample design for the 300-6 and associated waste sites consisted of a single decision unit for verification sampling. The sample design included twelve statistical samples and a single focus sample at the east borehole location. The verification sampling area was limited to the floor of the excavation, where there was the greatest potential for residual contamination. The upper boundary of the sampling area was based on the civil survey performed for the excavation; and was represented by the topographical line at the 111.5 m (365.8-ft) elevation mark. This sampling area stratum extended approximately 2 m (6.6 ft) beyond the eastern portion of the 300-6 waste site WIDS boundary and wrapped around the groundwater pool. Only surface contamination was expected at the 300-268 waste site as process knowledge indicated only dry

processes were conducted in the 3741 Building. Therefore, the 300-268 waste site was included in the statistical sampling area.

#### **4.353.4 Statement of Protectiveness**

Remedial actions were performed to support future industrial land use and to protect groundwater and the Columbia River. Further, the achieved residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 m [15 ft] deep). The site extended into the deep zone (greater than 4.6 m [15 ft] deep); however, the site was closed out using the shallow zone direct exposure, groundwater, and river protection cleanup criteria. Results indicate that the site supports future land uses that can be represented (or bounded) by the residential land use scenario and poses no threat to groundwater or the Columbia River. The 300-273 waste site has been reclassified to a status of “Final Closed Out.”

#### **4.354 UPR-300-43, 300 AREA SOLVENT REFINED COAL SPILL, UN-300-43**

The UPR-300-43 waste site was an unplanned release of less than 208 L (55 gal) of solvent refined coal due to failure of a corroded container in July 1986. All discolored soil was removed shortly after the release. No occurrence report was written. The discolored soil was removed from site. The UPR-300-43 waste site has been reclassified to “Rejected.”

#### **4.355 UPR-300-44, 313 BUILDING, URANIUM BEARING WASTE ETCH-ACID SPILL, UN-300-44**

The UPR-300-44 waste site was an unplanned release from a process sewer system failure under the 313 Building. While a new extrusion press was being installed, a leak was discovered in a section of process sewer line. Spills in the 313 Uranium Recovery Area could have entered this line, resulting in ground disposal of hazardous substances. The site was recognized as an unplanned release unit that required cleanup action and was “Consolidated” with the UPR-300-38 waste site to address all of the 313 Building unplanned releases as a single site.

#### **4.356 UPR-300-45, 303-F BUILDING URANIUM-BEARING ACID SPILL, UN-300-45**

##### **4.356.1 History**

The UPR-300-45 waste site was the soil beneath the former uranium-bearing acid transfer line, adjacent to the 303-F Building. The uranium-bearing acid transfer line ran through the pipe trench from the 333 Building to the valve box at the southeast corner of the 313 Building outside the Uranium Recovery Room. Leaks from the acid transfer pipeline contained uranium-bearing waste acids identified as nitric acid and sulfuric acid with uranium in solution. Analysis showed

the solution to contain 3,480 parts per million nitrate, 6,960 parts per million sulfate, and 920 parts per million uranium.

#### **4.356.2 Excavation Operations**

Remediation of the combined 300-40, UPR-300-39, UPR-300-40, and UPR-300-45 waste sites was performed from May 24, 2010, through July 20, 2010. The soil within the waste site footprints was excavated to a depth of 1 m (3.3 ft) bgs, and the resulting 911 BCM (1,192 BCY) of soil was disposed at ERDF.

#### **4.356.3 Verification Sampling**

Verification sampling for the 300-40, UPR-300-39, UPR-300-40, and UPR-300-45 waste sites was conducted December 15 and 16, 2011. Two decision units were identified for verification sampling in the overall excavation footprint. The 300-40 waste site excavation footprint is one decision unit, and the combined UPR-300-39, UPR-300-40, and UPR-300-45 waste site footprints was the second decision unit. Twelve statistical soil samples were collected from each decision unit.

#### **4.356.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed at ERDF. The UPR-300-45 waste site was evaluated against the criteria established for the residential land use criteria. Results indicate that the site supports future land uses that can be represented (or bounded) by the residential land use scenario and poses no threat to groundwater or the Columbia River. The UPR-300-45 waste site has been reclassified to a status of “Final Closed Out.”

### **4.357 UPR-300-46, CONTAMINATION NORTH OF 333 BUILDING**

#### **4.357.1 History**

The UPR-300-46 waste site was a layer of radioactively contaminated soil found during a pipe trench excavation inside the 333 Building fence, east of a telephone pole at the northern end of the 333 facility property.

#### **4.357.2 Excavation Operations**

Remediation of the UPR-300-46 waste site was performed from April 28 through June 4, 2009. The soil within the waste site footprint was excavated to a depth of 1 m (3 ft) bgs, and the resulting 75 BCM (100 BCY) of soil was disposed at ERDF.

**4.357.3 Verification Sampling**

Verification sampling for the UPR-300-46 and 300-109 waste sites was performed on January 6, 2010. The sample design included statistical sampling of the UPR-300-46 excavation footprint, focused sampling from the soil below the identified french drain location at the 300-109 site, and a composite sample from within the entire waste staging pile area footprint. Twelve statistical soil samples were collected on the grid within the remediation footprint at the site. A focused sampling approach was used to evaluate the area beneath the 300-109 french drain.

**4.357.4 Statement of Protectiveness**

The contaminated materials from the site have been excavated and disposed at ERDF. The UPR-300-46 waste site was evaluated against the criteria established for the residential land use criteria. Results indicate that the site supports future land uses that can be represented (or bounded) by the residential land use scenario and poses no threat to groundwater or the Columbia River. The UPR-300-46 waste site has been reclassified to a status of “Final Closed Out.”

**4.358 UPR-600-1, CONTAMINATION SPREAD AT 618-10 BURIAL GROUND, UN-600-2**

The UPR-600-1 unplanned release at the 618-10 Burial Ground was caused by a fire within a burial trench. The fire destroyed all flammable material in the affected trench including approximately 200 boxes of contaminated material and several “CWS” filters. The fire spread radioactive particulates to the immediate environment. After the fire was extinguished, the trench was covered with dirt. The UPR-600-1 waste site was recognized as an unplanned release unit that required cleanup action. The site has been “Consolidated” with the 618-10 Burial Ground.

**4.359 UPR-600-2, CONTAMINATION SPREAD AT 618-10, UN-600-2**

The UPR-600-2 waste site consisted of a contamination spread that occurred at the 618-10 Burial Ground during a routine “milk can” burial. An investigation resulted when a truck driver was found to be contaminated after completing the burial. A radiation survey conducted from the 327 Building to the 618-10 Burial Ground. A spot of contamination was found in front of the 300 Area Powerhouse. Another area of contamination was found in front of the burial ground access gate. No contamination was found on the highway. A 1.5-m (5-ft) radius around the burial receptacle was found to be contaminated to 870,000 cpm. The site was recognized as an unplanned release unit that required cleanup action. The UPR-600-2 waste site has been “Consolidated” with the 618-10 Burial Ground.

**4.360 UPR-600-3, CONTAMINATION SPREAD AT 618-10**

The UPR-600-3 waste site unplanned release occurred on September 4, 1993, when an improper container was used to dispose of waste into the 618-10 Burial Ground. The lid of the container came off, causing dust to puff out of the barrel and onto the ground. An area of approximately 56 m<sup>2</sup> (600 ft<sup>2</sup>) was contaminated to 400 millirads per hour at 5 cm (2 in.). The truck and the driver were also slightly contaminated. At the time of the release, the site was washed down by the Fire Department to preclude the spread of contamination. The UPR-600-3 waste site has been “Consolidated” with the 618-10 Burial Ground.

**4.361 UPR-600-4, CONTAMINATION SPREAD AT 618-11**

The UPR-600-4 waste site unplanned release occurred when a trailer truck hauling two waste casks from the 327 Building attempted to deposit waste into the vertical waste barrels at the 618-11 Burial Ground. As a waste can was dropped into a burial barrel, a “blowback” or radioactive material occurred contaminating four employees, a vehicle, and approximately 90 m<sup>2</sup> (1,000 ft<sup>2</sup>) of ground in the burial ground. Following the incident, fire houses were used to wash down the equipment and the contaminated area with water to preclude further spread of the contamination. The UPR-600-4 waste site has been “Consolidated” with the 618-11 Burial Ground.

**4.362 UPR-600-5, CONTAMINATION SPREAD AT 618-11**

The UPR-600-5 unplanned release contamination occurred on May 18, 1964, while dumping canned waste from the 325 Building, from a waste cask at the 618-11 Burial Ground. The waste truck was positioned over a waste receptacle barrel and the waste chute was opened. Fine white powder was seen drifting out of the chute. After washing down the chute and the plastic chute extension, contamination was detected. Ground contamination was identified measuring approximately 167 m<sup>2</sup> (1,800 ft<sup>2</sup>) with contamination levels of 500 cpm. Two employees were also found to be contaminated. A layer of gravel was placed over the ground contamination and reduced the readings to background levels. The UPR-600-5 waste site has been “Consolidated” with the 618-11 Burial Ground.

**4.363 UPR-600-6, CONTAMINATION SPREAD AT 618-11**

The UPR-600-6 unplanned release occurred on February 8, 1965, when winds blew waste from a truck, over an employee, and onto the ground, causing spotty contamination at the 618-11 Burial Ground. Winds that day were measured at 51 km/hr (32 mi/hr) with gusts up to 71 km/hr (44 mi/hr). A 130 m<sup>2</sup> (1,400 square ft<sup>2</sup>) area of soil was contaminated. The UPR-600-6 waste site has been “Consolidated” with the 618-11 Burial Ground.

**4.364 UPR-600-7, CONTAMINATION SPREAD AT 618-11**

The UPR-600-7 unplanned release occurred during the burial of a wooden box containing a highly contaminated waste filter from the 327 Building and one employee became contaminated. The truck was positioned at the burial trench and the truck was tilted. However, the box did not slide off the truck. The employee left the truck cab and noticed clouds of dust emitting out of the box seams, causing spotty contamination in the immediate vicinity and levels of 6,000 cpm on the employee. The UPR-600-7 waste site has been “Consolidated” with the 618-11 Burial Ground.

**4.365 UPR-600-8, CONTAMINATION SPREAD AT 618-11**

The UPR-600-8 unplanned release occurred on April 7, 1967, during routine burial operations at the 618-11 Burial Ground. Waste from the 327 Building was being deposited into a vertical waste receptacle through a chute from a cask. The contamination spread occurred as a result of air backup from the waste barrel or loose contamination blown from the release gate of the cask. At the time of the burial, the operation was being conducted from the upwind side of the cask. At the moment the waste was dropped into the chute the wind reversed in a strong gust, causing the airborne spread of contaminants. Three employees and the transport truck were also contaminated. A 300 Area Fire Department pumper unit was dispatched to immediately wash down the contaminated equipment and ground with water. The contaminated ground was then covered with gravel. The UPR-600-8 waste site has been “Consolidated” with the 618-11 Burial Ground.

**4.366 UPR-600-9, CONTAMINATION SPREAD AT 618-11**

The UPR-600-9 unplanned release occurred on April 14, 1967, during routine burial operations in the 618-11 Burial Ground when a piece of waste became wedged in the truck chute causing an airborne release of contamination. Three employees, two pick-up trucks and surrounding ground were found to be contaminated. The contamination inside the burial ground was covered with gravel. Contamination outside the fence was turned under and the site was released from radiation zone status. The UPR-600-9 waste site has been consolidated with the 618-11 Burial Ground. The stabilized area outside of the burial ground was documented as waste site UPR-600-22.

**4.367 UPR-600-10, CONTAMINATION SPREAD AT 618-11**

The UPR-600-10 unplanned release occurred on September 30, 1963, when a contamination release occurred during a routine, high level waste burial at the 618-11 Burial Ground. A “Milk Pail” container that was extremely contaminated with a significant amount of loose, highly radioactive material, was discharged into the 327-2 vertical waste barrel (caisson) causing a contamination spread. Although the wind was less than 16 km/hr (10 mi/hr), an area of



contamination was identified that measured approximately 36 m<sup>2</sup> (400 ft<sup>2</sup>) around the barrel. The maximum contamination reading on the ground was 1.4 rads/hour. Shortly after the contamination was identified, the ground area was washed down with water to control contamination spreading by the wind. The most highly contaminated earth was shoveled into the vertical waste barrels, and the entire area was covered with several inches of clean sand. The UPR-600-10 waste site has been “Consolidated” with the 618-11 Burial Ground.

#### **4.368 UPR-600-22**

##### **4.368.1 History**

The UPR-600-22 waste site was located adjacent to the north fence of the 618-11 Burial Ground. The waste site was a triangular plot of ground, measuring approximately 137 by 91 m (150 by 100 yd) that was contaminated with particulate fallout during a burial activity at the 618-11 Burial Ground. The contamination was covered by turning the soil under. The affected area was later scrapped into windrows, which are a series of small parallel berms approximately 46 cm (18 in.) tall by 0.9 m (3 ft) wide by 91 m (300 ft) long, and larger berms approximately 0.9 m (3 ft) tall.

##### **4.368.2 Excavation Operations**

Soil removal at the UPR-600-22 waste site was conducted between March 23 and 25, 2015. The remediation extended to approximately 1.2 m (4 ft) below ground surface, resulting in approximately 40 BCM (52 BCY) of soil being removed and disposed at ERDF. The soil was direct loaded from the waste site; therefore, no waste staging pile area was created. No overburden material was salvaged for use as clean backfill, and no anomalies or stained soil were encountered.

Following soil removal, the windrows were flattened and a GPERS survey of the entire waste site was conducted. No elevated radiological activity was observed.

##### **4.368.3 Verification Sampling**

Verification sampling for the UPR-600-22 waste site was performed on April 20, 2012. One decision unit was identified for the waste site. The decision unit is composed of a combination of discrete statistical soil samples, composite soil samples, and a discrete focused sample. The UPR-600-22 waste site footprint was used as the basis for the location of a random-start systematic grid for verification soil sampling. Twelve statistical soil sample locations were identified for the waste site.

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In addition to the discrete statistical samples, a focused sampling approach, utilizing composite sampling, was used to evaluate the mounded soil (windrows). The UPR-600-22 waste site footprint was divided into four equal sections, and one composite soil sample prepared from 25 aliquots taken from across each section. An area of slightly elevated gamma activity was detected during the initial GPERS survey; therefore, one discrete focused soil sample was also taken.

## **5.0 PERFORMANCE STANDARDS AND CONSTRUCTION QUALITY CONTROL**

This section addresses the process for demonstrating achievement of performance standards including attainment of RAOs, RAGs, and/or CULs and maintaining the required quality controls during remedial activities.

### **5.1 ATTAINMENT OF PERFORMANCE STANDARDS**

The remedial actions described in Section 4.0 of this report were performed to identify and reduce potential threats to human health and the environment from waste site contamination. Following remedial actions at a waste site, an evaluation against identified performance standards (the RAOs) is conducted in order to verify that the residual contamination does not pose an unacceptable health risk to future users of the site.

#### **5.1.1 Performance Standard Documentation**

Attainment of the specific RAO performance standards in the final action ROD and final closure of individual 300-FF-2 OU waste sites are documented in the cleanup verification packages, remaining sites verification packages, or similar supporting documentation. These documents provide remediation information as described in Section 2.3 to support the formal reclassification in the WSRFs. Table 5-1 identifies “Final No Action” waste sites in the 300-FF-2 OU where remedial action was not required based on evaluation of process history and/or confirmatory sampling data. Table 5-2 provides information to support the “Final Closed Out” reclassification for sites where contamination was present above RAGs and remediation consisting of RTD was required.

**Table 5-1. Final No Action and Consolidated Waste Sites in the 300 Area. (5 Pages)**

WIDS Site Code	WIDS Site Name	WSRF	Reclassification Date	Reclassification Status	Closure Document
300-1	Old North Richland Automotive Maintenance Yard	2014-010	02/18/2014	Final No Action	--
300-2	Contaminated Light Water Disposal; Potential Trench Location #1	2014-027	05/12/2014	Final No Action	<i>Evaluation of 300 Area Waste Sites, Attachment to WSRF-2014-027</i>
300-11	Pumphouse Underground Gasoline Tank, 382 Pumphouse UGT, 382-1	2014-112	01/15/2015	Final No Action	<i>Supporting Information for Reclassification of the 300-11, Pumphouse Underground Gasoline Tank, 382 Pumphouse UGT, 382-1 Waste Site, Attachment to Waste Site Reclassification Form 2014-112</i>
300-15:4	3906 North Side and 3906-B Lift Stations	2013-117	07/28/2015	Final No Action <sup>a</sup>	<i>Supporting Information for Reclassification of the 300-15:4, 3906 North Side and 3906-B Lift Stations Subsite, Attachment to Waste Site Reclassification Form 2013-117</i>
300-15:5	310 Retention Transfer System	2015-022	05/13/2015	Final No Action	<i>Supporting Information for Reclassification of the 300-15:5, 310 Retention Transfer System Subsite, Attachment to Waste Site Reclassification Form 2015-022</i>
300-29	305-B Berm, Source Location of UPR-600-11 Contaminated Soil	2014-010	02/18/2014	Final No Action	--
300-81	321 Building Steam Condensate, Miscellaneous Stream #370	98-162	02/12/1999	Consolidated	--
300-82	321 Building Steam Condensate, Miscellaneous Stream #371	98-163	01/19/1999	Consolidated	--
300-83	321 Building Steam Condensate, Miscellaneous Stream #372	98-164	01/19/1999	Consolidated	--
300-84	321 Building Vent Valve on Water Line, Miscellaneous Stream #348	98-187	01/19/1999	Consolidated	--
300-92	321 Building Stormwater Runoff, Miscellaneous Stream #680	98-209	01/19/1999	Consolidated	--

**Table 5-1. Final No Action and Consolidated Waste Sites in the 300 Area. (5 Pages)**

WIDS Site Code	WIDS Site Name	WSRF	Reclassification Date	Reclassification Status	Closure Document
300-131	3706 Fire Sprinkler System Water, Miscellaneous Stream #515	98-191	01/19/1999	Consolidated	--
300-132	3706 Building Steam Condensate, Miscellaneous Stream #368	98-192	01/19/1999	Consolidated	--
300-133	3706 Building Steam Condensate, Miscellaneous Stream #367, Injection Well #27	98-193	01/19/1999	Consolidated	--
300-134	3706 Building Steam Condensate, Miscellaneous Stream #362	98-194	01/19/1999	Consolidated	--
300-135	3706 Building Steam Condensate, Miscellaneous Stream #365	98-195	01/19/1999	Consolidated	--
300-136	3706 Building Steam Condensate, Miscellaneous Stream #366	98-196	01/19/1999	Consolidated	--
300-137	3706 Building Steam Condensate, Miscellaneous Stream #440	98-197	01/19/1999	Consolidated	--
300-138	3706 Building Steam Condensate, Miscellaneous Stream #360	98-198	01/19/1999	Consolidated	--
300-139	3706 Building Steam Condensate, Miscellaneous Stream #357	98-199	01/19/1999	Consolidated	--
300-140	3706 Building Steam Condensate, Miscellaneous Stream #356	98-200	01/19/1999	Consolidated	--
300-141	3706 Building Steam Condensate, Miscellaneous Stream #439, Injection Well #29	98-188	01/19/1999	Consolidated	--
300-142	3706 Building Steam Condensate, Miscellaneous Stream #369, Injection Well #30	98-201	01/19/1999	Consolidated	--
300-143	3706 Building Steam Condensate, Miscellaneous Stream #361	98-202	01/19/1999	Consolidated	--
300-144	3706 Building Steam Condensate, Miscellaneous Stream #358	98-203	01/19/1999	Consolidated	--
300-145	3706 Building Steam Condensate, Miscellaneous Stream #438, Injection Well #25	98-204	01/19/1999	Consolidated	--
300-146	3706 Building Stormwater Runoff, Miscellaneous Stream #364	98-165	01/19/1999	Consolidated	--
300-147	3706 Building Stormwater Runoff, Miscellaneous Stream #363	98-205	01/19/1999	Consolidated	--
300-148	3706 Building Stormwater Runoff, Miscellaneous Stream #359, Injection Well #22	98-206	01/19/1999	Consolidated	--

**Table 5-1. Final No Action and Consolidated Waste Sites in the 300 Area. (5 Pages)**

WIDS Site Code	WIDS Site Name	WSRF	Reclassification Date	Reclassification Status	Closure Document
300-149	3706A Building Steam Condensate, Miscellaneous Stream #432, Injection Well #28	98-207	01/19/1999	Consolidated	--
300-231	Vitrification Test Site Transformer Pad, Substation C3-S15	2013-109	08/15/2013	Consolidated	--
300-260	Contaminated Soil West of 313 Building	2014-016	03/18/2014	Final No Action	<i>Supporting Documentation for the 300-260, Contaminated Soil West of the 313 Building, Attachment to Waste Site Reclassification Form 2010-074</i>
300-279	3716 Automotive Repair Building Fuel Tanks	2014-042	05/12/2014	Final No Action	<i>Evaluation of 300 Area Waste Sites, Attachment to WSRF-2014-042</i>
300-281	Septic Tank Near 325 Building	2014-043	05/12/2014	Final No Action	<i>Evaluation of 300 Area Waste Sites, Attachment to WSRF-2014-043</i>
300-283	Contaminated Light Water Disposal Site #2; Potential Trench Location #2	2014-044	05/12/2014	Final No Action	<i>Evaluation of 300 Area Waste Sites, Attachment to WSRF-2014-044</i>
300-288:1	Piles of Garnet Sand/Soil Mixture Within Gravel Pit 6	2014-105	12/15/2014	Final No Action	<i>Supporting Information for Reclassification of the 300-288:1, Piles of Garnet Sand/Soil Mixture Within Gravel Pit 6 Subsite, Attachment to Waste Site Reclassification Form 2014-105</i>
300-290	Radiological Debris Area East of Horn Rapids Disposal Landfill	2014-113	01/23/2015	Final No Action	<i>Supporting Information for Reclassification of the 300-290, Radiological Debris Area East of Horn Rapids Disposal Landfill Site, Attachment to Waste Site Reclassification Form 2014-113</i>
300-291	Garnet Sand West of 350-A Paint Shop	2014-106	12/15/2014	Final No Action	<i>Supporting Information for Reclassification of the 300-291, Garnet Sand West of 350-A Paint Shop Waste Site, Attachment to Waste Site Reclassification Form 2014-106</i>
300-293:1	300 Area Miscellaneous Pipelines - less than 2.5 ft bgs	2014-046	05/12/2014	Final No Action	<i>Evaluation of 300 Area Waste Sites, Attachment to WSRF-2014-046</i>

**Table 5-1. Final No Action and Consolidated Waste Sites in the 300 Area. (5 Pages)**

WIDS Site Code	WIDS Site Name	WSRF	Reclassification Date	Reclassification Status	Closure Document
300-293:2	300 Area Miscellaneous Pipelines - greater than or equal to 2.5 ft bgs	2014-047	05/12/2014	Final No Action	<i>Evaluation of 300 Area Waste Sites, Attachment to WSRF-2014-047</i>
300-294	Garnet Sand East of 350 Building	2014-107	01/19/2015	Final No Action	<i>Supporting Information for Reclassification of the 300-294, Garnet and East of 350 Building Waste Site, Attachment to Waste Site Reclassification Form 2014-106</i>
313 URO	313 Uranium Recovery Operations, Uranium Recovery Operations	2013-111	08/15/2013	Consolidated	--
333 ESHTSSA	333 East Side Heat Treat Salt Storage Area	99-020	02/12/1999	Consolidated	--
333 LHWSA	333 Laydown HWSA, 333 Laydown Hazardous Waste Storage Area	99-005	02/12/1999	Consolidated	--
600-22	UFO Landing Site	2014-010	02/18/2014	Final No Action	<i>DOE/RL-96-42, Limited Field Investigation Report for the 300-FF-2 Operable Unit</i>
600-290:2	300 West Storage Area	2014-050	05/12/2014	Final No Action	<i>Evaluation of 300 Area Waste Sites, Attachment to WSRF-2014-050</i>
600-352-PL	Pipeline from 342 Sump to 310 Facility; 300 Area Retention/Transfer System (RTS) and Pipeline	2013-118	01/13/2014	Consolidated	--
UPR-300-1	316-1A, 307-340 Waste Line Leak, UN-300-1	2014-094	10/16/14	Consolidated	--
UPR-300-2	Releases at the 340 Facility, UN-300-2, UN-316-2	2014-094	10/16/14	Consolidated	--
UPR-300-11	Y Burial Ground, 318-11, 300 Wye Burial Ground	2014-094	10/16/14	Consolidated	--
UPR-300-13	UN-300-13, Acid Neutralization Tank Leak East of 333 Building	99-018	02/12/1999	Consolidated	--
UPR-300-14	UN-300-14, Acid Leak at 334 Tank Farm	99-019	02/12/1999	Consolidated	--
UPR-300-44	313 Building, Uranium Bearing Waste Etch-Acid Spill, UN-300-44	99-017	02/12/1999	Consolidated	--
UPR-600-1	Contamination Spread at 618-10 Burial Ground, UN-600-1	99-024	02/24/1999	Consolidated	--
UPR-600-2	Contamination Spread at 618-10, UN-600-2	99-023	02/24/1999	Consolidated	--
UPR-600-3	Contamination Spread at 618-10	99-022	02/24/1999	Consolidated	--
UPR-600-4	Contamination Spread at 618-11	99-025	02/24/1999	Consolidated	--

**Table 5-1. Final No Action and Consolidated Waste Sites in the 300 Area. (5 Pages)**

<b>WIDS Site Code</b>	<b>WIDS Site Name</b>	<b>WSRF</b>	<b>Reclassification Date</b>	<b>Reclassification Status</b>	<b>Closure Document</b>
UPR-600-5	Contamination Spread at 618-11	99-026	02/24/1999	Consolidated	--
UPR-600-6	Contamination Spread at 618-11	99-027	02/24/1999	Consolidated	--
UPR-600-7	Contamination Spread at 618-11	99-028	02/24/1999	Consolidated	--
UPR-600-8	Contamination Spread at 618-11	99-029	02/24/1999	Consolidated	--
UPR-600-9	Contamination Spread at 618-11	99-030	02/24/1999	Consolidated	--
UPR-600-10	Contamination Spread at 618-11	99-031	02/24/1999	Consolidated	--

<sup>a</sup> The waste site has institutional controls.

-- = not applicable

WIDS = Waste Information Data System

WSRF = Waste Site Reclassification Form



**Table 5-2. Final Closed Out and Closed Out Waste Site Reclassification  
Information for the 300 Area. (10 Pages)**

WIDS Site Code	WIDS Site Name	WSRF(s)	Reclassification Date	Reclassification Status	Closure Document
300 RLWS:1	Radioactive Liquid Waste Sewer	2015-031	09/09/2015	Final Closed Out	CVP-2015-00011, <i>Cleanup Verification Package for the 300 RLWS:1, 300 RLWS:2, 300 RRLWS:1, and 300-214:1 Subsites</i>
300 RLWS:2	309 Process Sewer to 340 Complex	2015-032	09/09/2015	Final Closed Out	CVP-2015-00011, <i>Cleanup Verification Package for the 300 RLWS:1, 300 RLWS:2, 300 RRLWS:1, and 300-214:1 Subsites</i>
300 RRLWS:1	Removed Sections of the 300 Area Retired Radioactive Liquid Waste Sewer System	2015-033	09/09/2015	Final Closed Out	CVP-2015-00011, <i>Cleanup Verification Package for the 300 RLWS:1, 300 RLWS:2, 300 RRLWS:1, and 300-214:1 Subsites</i>
300 VTS	300 Area Vitrification Test Site, In Situ Vitrification (ISV) Test Site	2014-013	02/18/2014	Final Closed Out	CVP-2005-00009, <i>Cleanup Verification Package for the 300 VTS Waste Site</i>
300-4	DOE 351 Substation Soil Contamination	2015-026	07/28/2015	Final Closed Out	CVP-2015-00008, <i>Cleanup Verification Package for the 300-4, DOE 351 Substation Soil Contamination Waste Site</i>
300-6	366/366A Fuel Oil Bunkers	2014-028	05/12/2014	Final Closed Out	<i>Evaluation of 300 Area Waste Sites, Attachment to WSRF-2014-028</i>
300-7	Undocumented Solid Waste Burial Ground Adjacent to 618-8, Possible Early Burial Ground Site	2014-109	06/29/2015	Final Closed Out	CVP-2015-00001, <i>Cleanup Verification Package for the 300-7, Undocumented Solid Waste Burial Ground Adjacent to 618-8, Possible Early Burial Ground Site</i>
300-8	Aluminum Recycle Storage Area, Aluminum Shavings Area	2014-013	02/18/2014	Final Closed Out	CVP-2005-00007, <i>Cleanup Verification Package for the 300-8 Waste Site</i>
300-9	Possible Early Burial Ground Sites North of RR and North of 618-8, Solid Waste Burial Ground	2015-010	05/13/2015	Final Closed Out	CVP-2015-00003, <i>Cleanup Verification Package for the 300-9, Possible Early Burial Ground Sites North of RR and North of 618-8, Solid Waste Burial Ground</i>
300-10	Burial Trench West of Process Trenches	2014-014	12/20/2014	Final Closed Out	BHI-01134, <i>300-FF-2 Waste Site 300-10 Verification Package Rev. 1</i>
300-15:2	300 Area Process Sewer North of Apple Street	2015-081	10/05/2015	Final Closed Out	<i>Final Action Evaluation of the 300-15:2 Subsite, Attachment to WSRF-2015-081</i>
300-15:3	300 Area Process Sewer South of Apple Street	2015-047	09/09/2015	Final Closed Out	CVP-2015-00012, <i>Cleanup Verification Package for the 300-15:3, 300 Area Process Sewer South of Apple Street and 300-34, 300 Process Sewer Leak Waste Sites</i>

**Table 5-2. Final Closed Out and Closed Out Waste Site Reclassification  
Information for the 300 Area. (10 Pages)**

WIDS Site Code	WIDS Site Name	WSRF(s)	Reclassification Date	Reclassification Status	Closure Document
300-15:6	305A Process Sewer and 24-in Process Sewer Main North of Apple Street	2015-054	09/09/2015	Final Closed Out	CVP-2015-00016, <i>Cleanup Verification Package for the 300-15:6, 305A Process Sewer and 24-Inch Process Sewer Main North of Apple Street Subsite</i>
300-16:1	Utility Pole Northwest of 314 Building	2014-029	05/12/2014	Final Closed Out	<i>Evaluation of 300 Area Waste Sites</i> , Attachment to WSRF-2014-029
300-16:2	Utility Pole East of 314 Building	2014-030	05/12/2014	Final Closed Out	<i>Evaluation of 300 Area Waste Sites</i> , Attachment to WSRF-2014-030
300-16:3	Utility Pole Southeast of 314 Building	2014-031	05/12/2014	Final Closed Out	<i>Evaluation of 300 Area Waste Sites</i> , Attachment to WSRF-2014-031
300-18	SCA #4, Surface Contaminated Area #4	2014-015	02/18/2014	Final Closed Out	CVP-2005-00004, <i>Cleanup Verification Package for the 300-18 Waste Site</i>
300-22	309 Building B-Cell Cleanout Leak	2015-046	08/07/2015	Final Closed Out	CVP-2015-00013, 08/13/2015, <i>Cleanup Verification Package for the 300-22, 309 Building B-Cell Cleanout Leak; 300-255, 309 Tank Farm Contaminated Soil; UPR-300-5, Spill at 309 Storage Basin, UN-300-5, Waste Sites</i>
300-23	PRTR Diesel Storage Tank, 309-1 UST	98-185	11/16/1998	Closed Out	Letter 036527, <i>Site Assessment Report for the 309-1 Underground Storage Tank (UST)</i>
300-24	Soil Contamination at the 314 Metal Extrusion Building	2014-030	05/12/2014	Final Closed Out	CVP-2011-00004, <i>Cleanup Verification Package for the 314 Building Waste Sites</i>
300-28	Contamination Found Along Ginko Street, Solid Waste Site Near 303-G Building	2014-031	05/12/2014	Final Closed Out	<i>Evaluation of 300 Area Waste Sites</i> , Attachment to WSRF-2014-031
300-32	333 Building, 333 N Fuels Manufacturing Building, New Fuel Cladding Facility, 333 Building Remaining Soils	2014-032	05/12/2014	Final Closed Out	<i>Evaluation of 300 Area Waste Sites</i> , Attachment to WSRF-2014-032
300-33	306W Metal Fabrication Development Building Releases	2014-017	02/18/2014	Final Closed Out	<i>Remaining Sites Verification Package for the 300-33, 306W Metal Fabrication Development Building Releases; the 300-256, 306E Fabrication and Testing Laboratory Releases; and the 300-41, 306E Neutralization Tank, Underground Lime Tank and Valve Pit</i> , Attachment to WSRF-2010-058

**Table 5-2. Final Closed Out and Closed Out Waste Site Reclassification  
Information for the 300 Area. (10 Pages)**

WIDS Site Code	WIDS Site Name	WSRF(s)	Reclassification Date	Reclassification Status	Closure Document
300-34	300 Area Process Sewer Leak (found during Project L-070 excavation at manhole PS-87)	2015-048	09/09/2015	Final Closed Out	CVP-2015-00012, <i>Cleanup Verification Package for the 300-15:3, 300 Area Process Sewer South of Apple Street and 300-34, 300 Process Sewer Leak Waste Sites</i>
300-35	3706A Fuel Storage Tank	99-003	02/12/1999	Closed Out	None – email only
300-40	Corrosion of Vitrified Clay Process Sewer Pipe	2014-033	05/12/2014	Final Closed Out	<i>Evaluation of 300 Area Waste Sites</i> , Attachment to WSRF-2014-033
300-41	306E Neutralization Tank, Underground Lime Tank and Valve Pit	2014-017	02/18/2014	Final Closed Out	<i>Remaining Sites Verification Package for the 300-33, 306W Metal Fabrication Development Building Releases; the 300-256, 306E Fabrication and Testing Laboratory Releases; and the 300-41, 306E Neutralization Tank, Underground Lime Tank and Valve Pit</i> , Attachment to WSRF-2010-058
300-43	Unplanned Release Outside the 304 Building	2014-031	05/12/2014	Final Closed Out	<i>Evaluation of 300 Area Waste Sites</i> , Attachment to WSRF-2014-031
300-45	Surface Contamination Area	2014-014	02/20/2014	Final Closed Out	BHI-01136, <i>300-FF-2 Waste Site 300-45 Verification Package</i>
300-46	Soil Contamination and Multiple French Drains Surrounding 3706 Building	2014-034	05/12/2014	Final Closed Out	<i>Evaluation of 300 Area Waste Sites</i> , Attachment to WSRF-2014-034
300-48	Thorium Oxide and Fuel Fabrication Chemical Wastes Around 3732 Building	2014-031	05/12/2014	Final Closed Out	<i>Evaluation of 300 Area Waste Sites</i> , Attachment to WSRF-2014-031
300-53	Unplanned Release East Side of 303-G	2014-011	02/18/2014	Final Closed Out	--
300-80	314 Building Stormwater Runoff and Steam Condensate, Miscellaneous Stream #268	2014-030	05/12/2014	Final Closed Out	CVP-2011-00004, <i>Cleanup Verification Package for the 314 Building Waste Sites</i>
300-109	333 Building Stormwater Runoff, Miscellaneous Stream #455	2014-014	02/20/2014	Final Closed Out	CVP-2010-00004, <i>Cleanup Verification Package for the 300-109, 333 Building Stormwater Runoff and UPR-300-46, Contamination North of 333 Building</i>
300-110	333 Building Stormwater Runoff, Miscellaneous Stream #456	2014-017	02/18/2014	Final Closed Out	CVP-2010-00001, <i>Cleanup Verification Package for the 618-1 Burial Ground</i>

**Table 5-2. Final Closed Out and Closed Out Waste Site Reclassification  
Information for the 300 Area. (10 Pages)**

WIDS Site Code	WIDS Site Name	WSRF(s)	Reclassification Date	Reclassification Status	Closure Document
300-123	366 Building Fuel Oil Bunker Loading Station Steam Condensate French Drain, Miscellaneous Stream #342	2014-028	05/12/2014	Final Closed Out	<i>Evaluation of 300 Area Waste Sites</i> , Attachment to WSRF-2014-028
300-214:1	Removed Sections of the 300 Area Retention Process Sewer	2015-030	09/09/2015	Final Closed Out	CVP-2015-00011, <i>Cleanup Verification Package for the 300 RLWS:1, 300 RLWS:2, 300 RRLWS:1, and 300-214:1 Subsites</i>
300-218	314, 314A and 314B Buildings, Engineering Development Laboratory	2014-030	05/12/2014	Final Closed Out	CVP-2011-00004, <i>Cleanup Verification Package for the 314 Building Waste Sites</i>
300-219	300 Area Waste Acid Transfer Line	2014-035	05/12/2014	Final Closed Out	<i>Evaluation of 300 Area Waste Sites</i> , Attachment to WSRF-2014-035
300-223	384 Powerhouse Fuel Oil Day Tanks #1 and #2	2001-042	07/08/2013	Closed Out	<i>300-223 Tanks</i> , Attachment to WSRF-2001-042
300-224	WATS and U-Bearing Piping Trench	2014-035	05/12/2014	Final Closed Out	<i>Evaluation of 300 Area Waste Sites</i> , Attachment to WSRF-2014-035
300-249	304 Building, Residual Rad Contamination	2014-031	05/12/2014	Final Closed Out	<i>Evaluation of 300 Area Waste Sites</i> , Attachment to WSRF-2014-031
300-251	Unplanned Release Outside the 303-K Building	2014-036	05/12/2014	Final Closed Out	<i>Evaluation of 300 Area Waste Sites</i> , Attachment to WSRF-2014-036
300-253	384-W Original Brine Pit, 384-W Original Salt Dissolving Pit and Brine Pump Pit	2014-012	3/10/2014	Final Closed Out	--
300-255	309 Tank Farm Contaminated Soil	2015-046	08/07/2015	Final Closed Out	CVP-2015-00013, <i>Cleanup Verification Package for the 300-22, 309 Building B-Cell Cleanout Leak; 300-255, 309 Tank Farm Contaminated Soil; UPR-300-5, Spill at 309 Storage Basin, UN-300-5, Waste Sites</i>
300-256	306E Fabrication and Testing Laboratory Releases	2014-017	02/18/2014	Final Closed Out	<i>Remaining Sites Verification Package for the 300-33, 306W Metal Fabrication Development Building Releases; the 300-256, 306E Fabrication and Testing Laboratory Releases; and the 300-41, 306E Neutralization Tank, Underground Lime Tank and Valve Pit</i> , Attachment to WSRF-2010-058

**Table 5-2. Final Closed Out and Closed Out Waste Site Reclassification  
Information for the 300 Area. (10 Pages)**

WIDS Site Code	WIDS Site Name	WSRF(s)	Reclassification Date	Reclassification Status	Closure Document
300-257	309 Process Sewer to River	2014-037	05/12/2014	Final Closed Out	<i>Evaluation of 300 Area Waste Sites</i> , Attachment to WSRF-2014-037
300-258	Abandoned Pipe Trench Between 334 Tank Farm and 306E	2014-038	05/12/2014	Final Closed Out	<i>Evaluation of 300 Area Waste Sites</i> , Attachment to WSRF-2014-038
300-259	Contamination Area Surrounding 618-1 Burial Ground	2014-014	02/20/2014	Final Closed Out	<i>Remaining Sites Verification Package for the 300-259, Contamination Area Surrounding 618-1 Burial Ground</i> , Attachment to WSRF-2009-059
300-262	Contaminated Soil West of South Process Pond	2014-020	03/10/2014	Final Closed Out	<i>CVP-2003-00002, Cleanup Verification Package for the South Process Pond (WIDS Site 316-1), the Retired Filter Backwash Pond (WIDS Site 300 RFBP), 300-262 Contaminated Soil, and Unplanned Release Sites UPR-300-32, UPR-300-33, UPR-300-34, UPR-300-35, UPR-300-36, UPR-300-37, and UPR-300-FF-1</i>
300-263	324 Building Diversion Tank	2015-050	09/17/2015	Final Closed Out	<i>CVP-2015-00015, Cleanup Verification Package for the 300-263, 324 Building Diversion Tank, and 316-3, 307 Disposal Trenches, Process Water Trenches Waste Sites</i>
300-268	3741 Building Foundation; Special Machine Shop; Box Storage Building Foundation	2014-028	05/12/2014	Final Closed Out	<i>Evaluation of 300 Area Waste Sites</i> , Attachment to WSRF-2014-028
300-270	Unplanned Release at 313 Building	2014-039	05/12/2014	Final Closed Out	<i>Evaluation of 300 Area Waste Sites</i> , Attachment to WSRF-2014-039
300-272	Underground Storage Tank Near the 377 Building	2002-049	11/04/2002	Closed Out	<i>Letter FH-0201208, Site Assessment Results for the Recently Discovered Underground Gasoline Storage Tank (Waste Information Data System [WIDS] Site 300-272) Located in the 300 Area</i>
300-273	Fuel Oil Transfer Pipeline, 366 Bunker Pipeline	2014-028	05/12/2014	Final Closed Out	<i>Evaluation of 300 Area Waste Sites</i> , Attachment to WSRF-2014-028
300-274	Surface Debris	2014-040	05/12/2014	Final Closed Out	<i>Evaluation of 300 Area Waste Sites</i> , Attachment to WSRF-2014-040

**Table 5-2. Final Closed Out and Closed Out Waste Site Reclassification  
Information for the 300 Area. (10 Pages)**

WIDS Site Code	WIDS Site Name	WSRF(s)	Reclassification Date	Reclassification Status	Closure Document
300-275	Potential Landfill on River Edge	2014-015	02/18/2014	Final Closed Out	<i>Remaining Sites Verification Package for the 300-275 Potential Landfill on River Edge Waste Site, Attachment to WSRF-2008-059</i>
300-276	3607 Sanitary System Miscellaneous Components, 300 Area Sanitary Sewer Disposal System, 3607 Sanitary Sewer System	2014-041	05/12/2014	Final Closed Out	<i>Evaluation of 300 Area Waste Sites, Attachment to WSRF-2014-041</i>
300-277	300 Area Queue Contamination	2015-080	12/17/2015	Final Closed Out	<i>CVP-2015-00018, Cleanup Verification Package for the 300-277, 300 Area Queue Contamination Waste Site</i>
300-280	Construction Debris Disposal Pit West of George Washington Way	2015-045	07/09/2015	Final Closed Out	<i>CVP-2015-00010, Cleanup Verification Package for the 300-280, Construction Debris Disposal Pit West of George Washington Way Extension Waste Site</i>
300-284	Sand Blasting Area Near 3221 Building	2014-100	12/16/2014	Final Closed Out	<i>CVP-2014-00001, Cleanup Verification Package for the 300-284, Sand Blasting Area Near 3221 Building Waste Site</i>
300-286	Three 300 Area Potentially Contaminated French Drain/Drywells	2014-045	05/12/2014	Final Closed Out	<i>Evaluation of 300 Area Waste Sites, Attachment to WSRF-2014-045</i>
300-287	Transite Debris West of Route 4 South	2014-108	11/19/2014	Final Closed Out	<i>Supporting Documentation for the 300-287, Transite Debris West of Route 4 South Waste Site, Attachment to WSRF-2014-108</i>
300-288:2	Undocumented Disposal Site Within Gravel Pit 6	2016-008	08/11/2016	Final Closed Out	<i>CVP-2016-00001, Cleanup Verification Package for the 300-288:2, Undocumented Disposal Site Within Gravel Pit 6 Subsite</i>
300-289	Stained Soil Area North of 300 Area	2015-017	05/13/2015	Final Closed Out	<i>CVP-2015-00004, Cleanup Verification Package for the 300-289, Stained Soil Area North of 300 Area Waste Site</i>
303-M SA	303-M Storage Area, 303-M Building Storage Area	2014-018	02/18/2014	Final Closed Out	<i>CVP-2010-00001, Cleanup Verification Package for the 618-1 Burial Ground</i>
303-M UOF	303-M Uranium Oxide Facility	2014-026	02/18/2014	Final Closed Out	<i>CVP-2010-00001, Cleanup Verification Package for the 618-1 Burial Ground</i>

**Table 5-2. Final Closed Out and Closed Out Waste Site Reclassification  
Information for the 300 Area. (10 Pages)**

WIDS Site Code	WIDS Site Name	WSRF(s)	Reclassification Date	Reclassification Status	Closure Document
311 MT1	311 Methanol Tank 1, 311 Tank Farm Underground Methanol Tank #1, 311-1	2014-009	02/18/2014	Final Closed Out	--
311 MT2	311 Methanol Tank 2, 311 Tank Farm Underground Methanol Tank #2, 311-2	2014-009	02/18/2014	Final Closed Out	--
313 ESSP	313 East Side Storage Pad, 313 Building East Site Storage Pad	2014-039	05/12/2014	Final Closed Out	<i>Evaluation of 300 Area Waste Sites, Attachment to WSRF-2014-039</i>
313 MT	313 Methanol Tank, 313 Building Underground Methanol Storage Tank	2014-009	02/1/2014	Final Closed Out	--
316-3	307 Disposal Trenches, Process Water Trenches	2015-049	09/17/2015	Final Closed Out	<i>CVP-2015-00015, Cleanup Verification Package for the 300-263, 324 Building Diversion Tank, and 316-3, 307 Disposal Trenches, Process Water Trenches Waste Sites</i>
331 LSLDF	331 LSL Drain Field, 331 Life Sciences Laboratory Drainfield	2014-019	03/10/2014	Final Closed Out	<i>Remaining Sites Verification Package for the 331 Life Sciences Laboratory Drain Field Septic System, Attachment to WSRF-2008-020</i>
333 ESHWSA	333 East Side HWSA, 333 Building East Side Hazardous Waste Storage Area	2014-018	02/18/2014	Final Closed Out	<i>CVP-2010-00001, Cleanup Verification Package for the 618-1 Burial Ground</i>
333 WSTF	333 West Side Tank Farm, 333 West Side Waste Oil Tank, 333 West Side Uranium Bearing Acid Tanks, 333 WSWOT	2014-035	05/12/2014	Final Closed Out	<i>Evaluation of 300 Area Waste Sites, Attachment to WSRF-2014-035</i>
340 COMPLEX	340 Radioactive Liquid Waste Handling Facility	2015-018	07/10/2015	Final Closed Out	<i>CVP-2015-00007, Cleanup Verification Package for the 340 Complex, 340 Radioactive Liquid Waste Handling Facility (Including UPR-300-1, UPR-300-2, and UPR-300-11)</i>
600-47	Dumping Area North of 300-FF-1	2014-015	02/18/2014	Final Closed Out	<i>CVP-2005-00005, Cleanup Verification Package for the 600-47 Waste Site</i>

**Table 5-2. Final Closed Out and Closed Out Waste Site Reclassification  
Information for the 300 Area. (10 Pages)**

WIDS Site Code	WIDS Site Name	WSRF(s)	Reclassification Date	Reclassification Status	Closure Document
600-243	Petroleum Contaminated Soil Bioremediation Pad, Bioremediation Pad inside Gravel Pit #6, Pit 6, Oil Contaminated Soil	2014-013	02/18/2014	Final Closed Out	<i>Remaining Sites Verification Package for the 600-243 Petroleum-Contaminated Soil Bioremediation Pad, Attachment to WSRF 2007-033</i>
600-259:1	Grout Lysimeter Site, Grout Waste Test Facility	2014-015	02/18/2014	Final Closed Out	<i>CVP-2005-00008, Cleanup Verification Package for the 600-259 Waste Site</i>
600-259:2	Grout Lysimeter Site, Special Waste Form Lysimeter	2014-015	02/18/2014	Final Closed Out	<i>CVP-2005-00008, Cleanup Verification Package for the 600-259 Waste Site</i>
600-290:1	Contaminated Concrete Foundation West of 618-13, Pad and Loading Dock	2014-013	02/18/2014	Final Closed Out	<i>CVP-2009-00005, Cleanup Verification Package for the 618-13 Burial Ground and the 600-290:1 Pad and Loading Dock Near 618-13</i>
600-367	Burial Pit Near Little Egypt	2015-070	08/28/2015	Final Closed Out	<i>CVP-2015-00017, Cleanup Verification Package for the 600-367, Burial Pit Near the Geotechnical Engineering and Development Facility (Little Egypt) Waste Site</i>
618-1	Solid Waste Burial Ground No. 1, 318-1, 300 Area Burial Ground No. 1	2015-069	08/07/2015	Final Closed Out	<i>CVP-2010-00001, Cleanup Verification Package for the 618-1 Burial Ground</i>
618-2	Solid Waste Burial Ground No. 2, 318-2	2015-071	08/07/2015	Final Closed Out	<i>CVP-2006-00010, Cleanup Verification Package for the 618-2 Burial Ground</i>
618-3	Solid Waste Burial Ground No. 3, 318-3, Burial Ground #3, Dry Waste Burial Ground No. 3	2015-072	08/07/2015	Final Closed Out	<i>CVP-2006-00005, Cleanup Verification Package for the 618-3 Burial Ground</i>
618-5	Burial Ground No. 5, Regulated Burning Ground, 318-5	2014-015	02/18/2014	Final Closed Out	<i>CVP-2003-00021, Cleanup Verification Package for the 618-5 Burial Ground</i>
618-7	Solid Waste Burial Ground No. 7, Burial Ground #7, 318-7	2014-013	02/18/2014	Final Closed Out	<i>CVP-2008-00002, Cleanup Verification Package for the 618-7 Burial Ground</i>
618-8	Solid Waste Burial Ground No. 8, 318-8, Early Solid Waste Burial Ground	2014-014	02/20/2014	Final Closed Out	<i>CVP-2006-00006, Cleanup Verification Package for the 618-8 Burial Ground</i>
618-9	300 West Burial Ground, 318-9, Dry Waste Burial Site No. 9	2014-013	02/18/2014	Final Closed Out	<i>DOE/RL-91-38, 01/01/1992, Engineering Evaluation of the 618-9 Burial Ground Expedited Response Action</i>



**Table 5-2. Final Closed Out and Closed Out Waste Site Reclassification  
Information for the 300 Area. (10 Pages)**

WIDS Site Code	WIDS Site Name	WSRF(s)	Reclassification Date	Reclassification Status	Closure Document
618-13	303 Building Contaminated Soil Burial Site	2014-013	02/18/2014	Final Closed Out	CVP-2009-00005, <i>Cleanup Verification Package for the 618-13 Burial Ground and the 600-290:1 Pad and Loading Dock Near 618-13</i>
3712 USSA	3712 Uranium Scrap Storage Area, 3712 Building Uranium Scrap Storage Area, 3712 Fuels Warehouse	2014-048	05/12/2014	Final Closed Out	<i>Evaluation of 300 Area Waste Sites</i> , Attachment to WSRF-2014-048
UPR-300-4	UN-300-4, Contaminated Soil Beneath the 321 Building	2014-049	05/12/2014	Final Closed Out	<i>Evaluation of 300 Area Waste Sites</i> , Attachment to WSRF-2014-049
UPR-300-5	UN-300-5, Spill at 309 Storage Basin	2015-046	08/07/2015	Final Closed Out	CVP-2015-00013, <i>Cleanup Verification Package for the 300-22, 309 Building B-Cell Cleanout Leak; 300-255, 309 Tank Farm Contaminated Soil; UPR-300-5, Spill at 309 Storage Basin, UN-300-5, Waste Sites</i>
UPR-300-7	UN-300-7, Oil Spill at 384 Building	99-050	08/24/1999	Final Closed Out	BHI-01298, <i>300-FF-1 Operable Unit, North Process Pond/Scraping Disposal Area Verification Package</i>
UPR-300-17	Metal Shavings Fire	2014-018	02/18/2014	Final Closed Out	<i>Remaining Sites Verification Package for the UPR-300-17, UN-300-17, Metal Shavings Fire Waste Site</i> , Attachment to WSRF-2010-014
UPR-300-38	Soil Contamination Beneath the 313 Building, 313 Slab, Demolished 313 Building Foundation	2014-039	05/12/2014	Final Closed Out	<i>Evaluation of 300 Area Waste Sites</i> , Attachment to WSRF-2014-039
UPR-300-39	Sodium Hydroxide Leak at 311 Tank Farm	2014-033	05/12/2014	Final Closed Out	<i>Evaluation of 300 Area Waste Sites</i> , Attachment to WSRF-2014-033
UPR-300-40	Acid Release at the 303-F Pipe Trench, UN-300-40, UPR-300-31, UN-300-31	2014-033	05/12/2014	Final Closed Out	<i>Evaluation of 300 Area Waste Sites</i> , Attachment to WSRF-2014-033
UPR-300-41	300 Area #340 Building Phosphoric Acid Spill, UN-300-41	2014-009	02/18/2014	Final Closed Out	--
UPR-300-42	300 Area Powerhouse Fuel Oil Spill, UN-300-42	2014-028	05/12/2014	Final Closed Out	<i>Evaluation of 300 Area Waste Sites</i> , Attachment to WSRF-2014-028
UPR-300-45	303-F Building Uranium-Bearing Acid Spill, UN-300-45	2014-033	05/12/2014	Final Closed Out	<i>Evaluation of 300 Area Waste Sites</i> , Attachment to WSRF-2014-033

**Table 5-2. Final Closed Out and Closed Out Waste Site Reclassification  
Information for the 300 Area. (10 Pages)**

WIDS Site Code	WIDS Site Name	WSRF(s)	Reclassification Date	Reclassification Status	Closure Document
UPR-300-46	Contamination North of 333 Building	2014-018	02/18/2014	Final Closed Out	CVP-2010-00004, <i>Cleanup Verification Package for the 300-109, 333 Building Stormwater Runoff and UPR-300-46, Contamination North of 333 Building</i>
UPR-600-22	WPPSS Windrow Site, 600-21	2015-044	08/14/2015	Final Closed Out	CVP-2015-00009, <i>Cleanup Verification Package for the UPR-600-22, WPPSS Windrow Waste Site</i>

-- = not available

BHI = Bechtel Hanford, Inc.

DOE = U.S. Department of Energy

FH = Fluor Hanford

PRTR = Plutonium Recycle Test Reactor

SCA = soil contamination area

WATS = Waste Acid Treatment System

WIDS = Waste Information Data System

WPPSS = Washington Public Power Supply System

WSRF = Waste Site Reclassification Form

### 5.1.2 Remedial Action Objectives and Goals

As applicable, RAO performance standard attainment involves comparisons of soil analytical data to RAGs (Table 5-3) and is evaluated using the following general steps:

- Identify the units within a site for cleanup verification and conduct sample collection and analysis for COCs and COPCs
- Calculate the summary statistics or determine maximum values for the residual contaminants in the identified units
- Identify the appropriate RAGs to be applied to the units
- Evaluate the summary statistics or maximum values, as appropriate, for the identified units against the decision rules for achieving the appropriate RAGs.

Remedial action goals are specific numeric targets developed to ensure achievement of the RAOs identified in the final action RODs. The RAGs applicable to the applicable 300-FF-2 OU waste sites, along with the process for verifying attainment of the RAGs, are described in detail in the 300 Area RDR/RAWP (DOE/RL-2014-13-ADD1) and are summarized in Table 5-3.

NOTE: The final action ROD determined that cleanup to levels protective of human health would also be protective of ecological populations and communities.

**Table 5-3. Summary of Achieved Performance Standards. (2 Pages)**

<b>Regulatory Requirement</b>	<b>Remedial Action Goals</b>	<b>Evaluation Method</b>
Direct Exposure – Radionuclides	Based on excess cancer risk of $10^{-4}$ or a radiological does of 15 mrem/yr.	Compared dose and risk goals to RESRAD model outputs based on land use assumptions and verification data set values.
Direct Exposure – Nonradionuclides	Soil residential - WAC 173-340-740 chemical standards for unrestricted use for all COCs using a hazard index of one and a cancer risk of $1 \times 10^{-6}$ . Soil industrial - WAC 173-340-745 chemical standards for industrial use for all COCs using a hazard index of one and a cancer risk of $1 \times 10^{-5}$ .	Compared goals with verification data set values.
Groundwater and Surface Water Protection – Radionuclides	Attained individual radionuclide groundwater and river cleanup requirements. Attained National Primary Drinking Water Standards.	Compared goals to RESRAD model outputs based on unrestricted land use assumptions and verification data set values.

**Table 5-3. Summary of Achieved Performance Standards. (2 Pages)**

<b>Regulatory Requirement</b>	<b>Remedial Action Goals</b>	<b>Evaluation Method</b>
Groundwater and Surface Water Protection – Nonradionuclides	Attained individual nonradionuclide groundwater and river cleanup requirements.	Compared the RAGs of the 300 Area RDR/RAWP (DOE/RL-2014-13-ADD1) with verification data set values.

COC = contaminant of concern

RAG = remedial action goal

RDR/RAWP = Remedial Design Report/Remedial Action Work Plan

RESRAD = RESidual RADioactivity dose model

WAC = *Washington Administrative Code*

### **5.1.3 Contaminant Identification**

As applicable, the COPCs and COCs for the waste sites were identified in the final action ROD, the 300 Area RDR/RAWP (DOE/RL-2014-13-ADD1), and the 300 Area SAP (DOE/RL-2001-48).

The final lists of relevant COCs are documented in the closure document for each waste site and may include additional constituents identified during the remediation and characterization process (Table 5-4), pursuant to the interim action ROD “observational approach” or other supporting documentation. Following the process described in this section, residual soil concentrations at all of the sites addressed in this report were shown to meet the RAO performance standards established for unrestricted surface use. The waste sites individually meet the cleanup objectives for eventual unrestricted surface use summarized in Table 5-3. Closeout of individual waste sites was based on the evaluation of analytical laboratory results from verification or confirmatory soil samples that were analyzed by contract laboratories using approved EPA methods. The resulting data for each waste site were subjected to a data quality assessment and determined to be suitable for their intended use to support closure decisions.

Table 5-4. Summary of Waste Site Contaminants of Concern and Potential Concern. (6 Pages)

Waste Site	Americium-241	Carbon-14	Cesium-137	Cobalt-60	Europium-152,-154,-155	Nickel-63	Plutonium-238	Pu-239/240	Pu-241	Strontium-90	Technetium-99	Tritium	Total Uranium	Uranium-233/234	Uranium-235, -238	Anions	Antimony	Arsenic	Barium	Boron	Beryllium	Cadmium	Cobalt	Copper	Chromium	Cyanide	Lead	Hexavalent Chromium	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Vanadium	Zinc	Asbestos	Herbicides	PAH	PCBs	Pesticides	TPH	VOCs	SVOCs			
300 RLWS:1	X	X	X	X	X		X	X	X	X		X	X	X	X	X									X						X					X		X	X		X						
300 RLWS:2	X	X	X	X	X		X	X	X	X		X	X	X	X	X									X						X						X		X	X		X					
300 RRLWS:1	X	X	X	X	X		X	X	X	X		X	X	X	X	X									X						X							X		X	X		X				
300 VTS	X		X	X			X	X		X																															X						
300-2	X		X	X	X		X	X	X			X		X	X		X	X	X	X	X	X	X	X	X		X			X	X	X	X	X	X	X	X										
300-4													X	X	X										X		X				X		X							X	X		X				
300-6														X	X		X	X	X	X	X	X	X	X	X		X			X	X	X	X	X	X	X	X				X	X		X	X	X	
300-7	X		X			X	X	X		X			X	X	X			X	X			X			X		X				X			X	X			X									
300-8													X								X																										
300-9	X													X	X										X		X				X	X	X									X					
300-10				X														X																							X	X					
300-11																	X	X	X	X	X	X	X	X	X		X			X	X	X	X	X	X	X	X						X	X			
300-15:2	X		X	X	X								X		X	X	X	X	X	X	X	X	X	X	X		X			X	X	X	X	X	X	X	X				X		X	X	X		
300-15:3	X		X	X	X								X		X	X	X	X	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X	X	X				X		X		X		
300-15:4	X	X				X				X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X	X				X	X		X	X	X	
300-15:5													X		X	X			X				X	X	X					X			X			X	X					X					
300-15:6	X		X	X	X								X		X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X	X				X	X		X	X	X	
300-16:1														X	X						X						X				X										X		X		X		
300-16:2														X	X						X						X				X										X	X		X		X	
300-16:3			X	X	X									X	X	X											X				X											X				X	
300-18													X					X	X		X	X			X		X																				

Table 5-4. Summary of Waste Site Contaminants of Concern and Potential Concern. (6 Pages)

Waste Site	Americium-241	Carbon-14	Cesium-137	Cobalt-60	Europium-152,-154,-155	Nickel-63	Plutonium-238	Pu-239/240	Pu-241	Strontium-90	Technetium-99	Tritium	Total Uranium	Uranium-233/234	Uranium-235, -238	Anions	Antimony	Arsenic	Barium	Boron	Beryllium	Cadmium	Cobalt	Copper	Chromium	Cyanide	Lead	Hexavalent Chromium	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Vanadium	Zinc	Asbestos	Herbicides	PAH	PCBs	Pesticides	TPH	VOCs	SVOCs		
300-22	X	X						X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	X		X	X	X	X		X	X	X	X	X				X		X	X	X		
300-24														X	X						X						X				X								X				X			
300-28			X	X	X									X	X	X											X				X										X				X	
300-32	X		X	X	X								X	X	X	X		X			X	X			X		X	X	X		X									X		X	X	X		
300-33	X		X	X	X									X	X	X	X	X	X	X	X	X	X	X	X		X			X	X	X	X	X	X	X	X				X			X	X	
300-34	X		X	X	X								X		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X				X		X		X	
300-40	X		X	X	X									X	X	X								X	X						X						X				X	X	X			
300-41	X		X	X	X									X	X	X	X	X	X	X	X	X	X	X	X		X			X	X	X	X	X	X	X				X			X	X		
300-43			X	X	X									X	X	X											X				X										X				X	
300-45														X	X		X	X	X	X	X	X	X	X	X		X			X		X	X	X	X	X	X					X				X
300-46	X	X	X	X	X	X		X	X	X	X	X		X	X	X		X	X		X						X	X		X		X					X			X	X				X	
300-48			X	X	X									X	X	X											X				X										X				X	
300-80														X	X						X						X				X										X	X				X
300-109	X		X	X	X						X			X	X		X	X	X	X	X	X	X	X	X		X			X		X	X	X	X	X				X	X					
300-110			X										X	X	X	X			X		X			X	X		X				X	X	X		X					X						
300-123														X	X		X	X	X	X	X	X	X	X	X		X			X	X	X	X	X	X	X				X	X		X	X	X	
300-214:1	X	X	X	X	X		X	X	X	X		X	X	X	X	X									X						X					X				X	X		X			
300-218														X	X						X						X				X										X	X				X
300-219	X		X	X	X									X	X	X	X	X	X	X	X	X	X	X	X		X			X	X	X	X	X	X	X						X	X			
300-224	X		X	X	X									X	X	X	X	X	X	X	X	X	X	X	X		X			X	X	X	X	X	X	X						X	X			
300-249			X	X	X									X	X	X											X				X										X					X

Table 5-4. Summary of Waste Site Contaminants of Concern and Potential Concern. (6 Pages)

Waste Site	Americium-241	Carbon-14	Cesium-137	Cobalt-60	Europium-152,-154,-155	Nickel-63	Plutonium-238	Pu-239/240	Pu-241	Strontium-90	Technetium-99	Tritium	Total Uranium	Uranium-233/234	Uranium-235, -238	Anions	Antimony	Arsenic	Barium	Boron	Beryllium	Cadmium	Cobalt	Copper	Chromium	Cyanide	Lead	Hexavalent Chromium	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Vanadium	Zinc	Asbestos	Herbicides	PAH	PCBs	Pesticides	TPH	VOCs	SVOCs						
300-251				X						X				X	X							X					X														X		X		X					
300-255	X	X						X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	X	X		X	X	X		X	X	X	X	X					X		X	X	X	X				
300-256	X		X	X	X									X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	X	X					X				X	X				
300-257	X		X	X	X					X			X		X		X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	X	X					X					X				
300-258	X		X	X	X					X				X	X	X							X		X	X		X			X												X							
300-259	X		X	X	X									X	X		X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	X	X														
300-260	X		X	X	X										X				X								X																							
300-262				X										X	X																															X				
300-263	X		X				X	X		X				X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X					X		X			X				
300-268														X	X		X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	X	X				X	X		X	X	X					
300-270			X	X	X					X				X	X	X						X				X		X																X			X			
300-273														X	X		X	X	X	X	X	X	X	X	X		X			X	X	X	X	X	X	X	X				X	X		X	X	X				
300-274																																													X		X		X	
300-275				X										X	X			X									X											X												
300-276																X	X	X	X	X	X	X	X	X	X		X		X		X		X	X	X	X	X		X		X	X	X				X			
300-277	X		X	X	X		X	X		X		X	X	X	X		X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X					X		X			X			
300-279																											X			X												X	X		X	X				
300-280																	X	X	X			X		X	X		X		X		X	X		X	X	X					X	X		X						
300-283																	X	X	X	X	X	X	X	X	X		X		X		X	X	X	X	X	X	X													
300-284																			X			X	X	X			X			X		X																		
300-286																	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X				X	X								

Table 5-4. Summary of Waste Site Contaminants of Concern and Potential Concern. (6 Pages)

Waste Site	Americium-241	Carbon-14	Cesium-137	Cobalt-60	Europium-152,-154,-155	Nickel-63	Plutonium-238	Pu-239/240	Pu-241	Strontium-90	Technetium-99	Tritium	Total Uranium	Uranium-233/234	Uranium-235, -238	Anions	Antimony	Arsenic	Barium	Boron	Beryllium	Cadmium	Cobalt	Copper	Chromium	Cyanide	Lead	Hexavalent Chromium	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Vanadium	Zinc	Asbestos	Herbicides	PAH	PCBs	Pesticides	TPH	VOCs	SVOCs				
300-287																																					X											
300-288:1																	X	X	X	X	X	X	X	X	X		X			X	X	X	X	X	X	X												
300-288:2			X	X	X									X	X		X	X	X		X	X		X			X			X	X		X	X	X	X					X		X		X			
300-289																	X	X	X	X	X	X	X	X	X		X	X		X	X	X	X	X	X	X					X		X		X			
300-290	X		X	X	X										X		X	X	X	X	X	X	X	X	X		X			X	X	X	X	X	X	X				X			X					
300-291																	X	X	X	X	X	X	X	X	X		X			X	X	X	X	X	X	X	X											
300-293:2	X		X	X	X								X		X																																	
300-294																	X	X	X	X	X	X	X	X	X		X			X	X	X	X	X	X	X	X											
303-M SA			X										X	X	X	X			X		X			X	X		X				X	X	X		X						X							
303-M UOF			X										X	X	X	X			X		X			X	X		X				X	X	X		X						X							
313 ESSP			X	X	X					X				X	X	X					X				X			X														X			X			
316-3	X		X				X	X		X				X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	X	X	X	X	X					X		X		X		
331 LSLDF	X		X	X	X									X	X	X					X				X			X				X										X	X	X		X		
333 ESHWSA			X										X	X	X	X			X		X			X	X		X				X	X	X		X						X							
333 WSTF	X		X	X	X									X	X	X	X	X	X	X	X	X	X	X	X		X			X	X	X	X	X	X	X	X							X	X			
340 COMPLEX	X		X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	X	X	X	X	X				X	X						
600-47													X					X	X		X	X			X			X																				
600-243																	X	X	X	X	X	X	X	X	X		X			X		X	X	X	X	X											X	
600-259:1			X	X							X	X																																				
600-259:2			X	X							X	X																																				
600-290:1													X	X	X		X	X	X	X	X	X	X	X	X		X	X		X	X	X	X	X	X	X								X	X			



Table 5-4. Summary of Waste Site Contaminants of Concern and Potential Concern. (6 Pages)

Waste Site	Americium-241	Carbon-14	Cesium-137	Cobalt-60	Europium-152,-154,-155	Nickel-63	Plutonium-238	Pu-239/240	Pu-241	Strontium-90	Technetium-99	Tritium	Total Uranium	Uranium-233/234	Uranium-235, -238	Anions	Antimony	Arsenic	Barium	Boron	Beryllium	Cadmium	Cobalt	Copper	Chromium	Cyanide	Lead	Hexavalent Chromium	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Vanadium	Zinc	Asbestos	Herbicides	PAH	PCBs	Pesticides	TPH	VOCs	SVOCs			
600-290:2													X				X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	X				X		X	X	X				
618-1:1			X										X	X	X	X			X		X			X	X		X				X	X	X		X				X								
618-1:2			X										X	X	X	X			X		X			X	X		X				X	X	X		X				X								
618-2	X		X	X	X	X	X	X	X	X		X	X	X	X				X			X			X		X						X														
618-3													X	X	X			X	X			X			X		X						X	X													
618-5													X					X				X			X		X																				
618-7			X		X									X	X						X				X		X													X	X		X		X		
618-8													X	X	X			X	X			X			X		X						X	X													
618-9								X	X				X																																		
618-13													X	X	X		X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X							X	X			
3712 USSA														X	X																																
UPR-300-4	X		X	X	X			X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X		X			X	X	X	X	X	X	X								X	X		
UPR-300-5	X	X						X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X				X		X	X	X			
UPR-300-7				X									X				X	X	X	X	X	X	X	X	X		X			X		X	X	X	X	X	X				X					X	
UPR-300-17	X		X	X	X									X	X																										X	X		X			
UPR-300-38			X	X	X					X				X	X	X					X				X		X														X			X			
UPR-300-39	X		X	X	X									X	X	X								X	X						X						X					X	X	X			
UPR-300-40	X		X	X	X									X	X	X								X	X						X						X					X	X	X			
UPR-300-42														X	X		X	X	X	X	X	X	X	X	X		X			X	X	X	X	X	X	X				X	X		X	X	X		
UPR-300-45	X		X	X	X									X	X	X								X	X						X						X					X	X	X			
UPR-300-46	X		X	X	X						X			X	X		X	X	X	X	X	X	X	X	X		X			X		X	X	X	X	X				X	X						

Table 5-4. Summary of Waste Site Contaminants of Concern and Potential Concern. (6 Pages)

Waste Site	Americium-241	Carbon-14	Cesium-137	Cobalt-60	Europium-152,-154,-155	Nickel-63	Plutonium-238	Pu-239/240	Pu-241	Strontium-90	Technetium-99	Tritium	Total Uranium	Uranium-233/234	Uranium-235, -238	Anions	Antimony	Arsenic	Barium	Boron	Beryllium	Cadmium	Cobalt	Copper	Chromium	Cyanide	Lead	Hexavalent Chromium	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Vanadium	Zinc	Asbestos	Herbicides	PAH	PCBs	Pesticides	TPH	VOCs	SVOCs
UPR-600-22			X				X	X						X	X																													

PAH = polycyclic aromatic hydrocarbons  
PCB = polychlorinated biphenyl  
SVOC = semivolatile organic compound

TPH = total petroleum hydrocarbons  
VOC = volatile organic compound

## **5.2 QUALITY CONTROL**

The quality assurance and quality control programs used throughout the remediation activities are identified in the 100 Area RDR/RAWP (DOE/RL-96-17), in the 300 Area SAP (DOE/RL-2001-48), and other supporting documentation (e.g., BHI-01249, *Data Quality Objectives Summary Report for 100/300 Area Remaining Sites Analytical Sampling Effort*), as applicable. Samples that were used to demonstrate achieving the cleanup objectives for individual waste sites were collected and analyzed in accordance with these documents, which were approved by the Tri-Party agencies. The sampling and analysis plan documents contained a quality assurance project plan to establish the objectives, functional activities, methods, and quality assurance/quality control measures associated with the sampling and analysis activities. Verification data sets that were used to support waste site closure underwent a data quality assessment to ensure suitability for their intended use. Results of the data quality assessment are documented in the closure documents for individual waste sites.



## 6.0 FINAL INSPECTION AND CERTIFICATIONS

Based on evaluation of the approved closeout documentation and final inspection, remedial actions have been completed and RAOs have been achieved for the 300-FF-2 OU waste sites identified in Tables 5-1 and 5-2. Pursuant to the scope of the 300 Area final action ROD and RAOs, this means that contaminated soil was excavated and disposed at ERDF and waste sites were backfilled and revegetated, as needed.

The results of confirmatory and verification sampling at final closed out and final no action 300-FF-2 OU waste sites show that residual contaminant concentrations allow for unrestricted surface use (i.e., ground surface to 4.6 m [15 ft] deep), or meet cleanup levels for industrial land use with the application of institutional controls. The results also demonstrate that residual contaminant concentrations are protective of groundwater and the Columbia River. If deemed necessary, final inspections of the remedial actions will be conducted in the future and include RL, EPA, and contractor representatives. The inspections would include only the waste sites where remedial actions occurred to verify that the sites had been backfilled with clean materials and revegetated as required by the applicable interim action RODs. The waste sites have been reclassified as “Final Closed Out,” “Final No Action,” or “Rejected” (RL-TPA-90-0001).

DOE/RL-2001-41, *Sitewide Institutional Controls Plan for Hanford CERCLA Response Actions and RCRA Corrective Actions*, describes institutional controls for the Hanford Site. Institutional controls are required at 52 of the remediated 300-FF-2 OU waste sites (including subsites). Table 6-1 identifies each individual waste site and its associated institutional control. The primary institutional control associated with restricting the site to industrial land use. Analyses of soils at these waste sites have been demonstrated not to meet CULs for residential direct exposure.

**Table 6-1. 300-FF-2 Operable Unit Sites with Institutional Controls. (4 Pages)**

WIDS Site Code	WIDS Site Name	Institutional Control	Rationale
300 RLWS:1	Radioactive Liquid Waste Sewer	Site restricted to industrial land use.	Verification sampling results for cesium-137 and strontium-90 exceed the residential direct exposure CULs.
300 RLWS:2	309 Process Sewer to 340 Complex	Site restricted to industrial land use.	Verification sampling results for cesium-137 and strontium-90 exceed the residential direct exposure CULs.
300 RRLWS:1	Removed Sections of the 300 Area Retired Radioactive Liquid Waste Sewer System	Site restricted to industrial land use.	Verification sampling results for cesium-137 and strontium-90 exceed the residential direct exposure CULs.
300-9	Possible Early Burial Ground Sites North of RR and North of 618-8, Solid Waste Burial Ground	Site restricted to industrial land use.	Verification sampling results for aroclor-1260 exceed the residential exposure CULs.
300-15:2	300 Area Process Sewer North of Apple Street	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.

**Table 6-1. 300-FF-2 Operable Unit Sites with Institutional Controls. (4 Pages)**

<b>WIDS Site Code</b>	<b>WIDS Site Name</b>	<b>Institutional Control</b>	<b>Rationale</b>
300-15:3	300 Area Process Sewer South of Apple Street	Site restricted to industrial land use.	Verification sampling results for cesium-137, aroclor-1248, and aroclor-1254 exceed the residential exposure CULs.
300-15:4	3906 North Side and 3906-B Lift Stations	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.
300-15:6	305A Process Sewer and 24-in. Process Sewer Main North of Apple Street	Site restricted to industrial land use.	Verification sampling results for aroclor-1260 exceed the residential exposure CULs.
300-16:1	Utility Pole Northwest of 314 Building	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.
300-16:2	Utility Pole East of 314 Building	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.
300-16:3	Utility Pole Southeast of 314 Building	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.
300-24	Soil Contamination at the 314 Metal Extrusion Building	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.
300-28	Contamination Found Along Ginko Street, Solid Waste Site Near 303-G Building	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.
300-33	306W Metal Fabrication Development Building Releases	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.
300-34	300 Area Process Sewer Leak (found during Project L-070 excavation at manhole PS-87)	Site restricted to industrial land use.	Verification sampling results for cesium-137, aroclor-1248, and aroclor-1254 exceed the residential exposure CULs.
300-41	306E Neutralization Tank, Underground Lime Tank and Valve Pit	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.
300-43	Unplanned Release Outside the 304 Building	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.
300-46	Soil Contamination and Multiple French Drains Surrounding 3706 Building	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.
300-48	Thorium Oxide and Fuel Fabrication Chemical Wastes Around 3732 Building	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.
300-53	Unplanned Release East Side of 303-G	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.
300-80	314 Building Stormwater Runoff and Steam Condensate, Miscellaneous Stream #268	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.
300-110	333 Building Stormwater Runoff, Miscellaneous Stream #456	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.

**Final Inspection and Certifications****Table 6-1. 300-FF-2 Operable Unit Sites with Institutional Controls. (4 Pages)**

<b>WIDS Site Code</b>	<b>WIDS Site Name</b>	<b>Institutional Control</b>	<b>Rationale</b>
300-214:1	Removed Sections of the 300 Area Retention Process Sewer	Site restricted to industrial land use.	Verification sampling results for cesium-137 and strontium-90 exceed the residential direct exposure CULs.
300-218	314, 314A and 314B Buildings, Engineering Development Laboratory	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.
300-219	300 Area Waste Acid Transfer Line	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.
300-224	WATS and U-Bearing Piping Trench	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.
300-249	304 Building, Residual Rad Contamination	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.
300-251	Unplanned Release Outside the 303-K Building	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.
300-253	384-W Original Brine Pit, 384-W Original Salt Dissolving Pit and Brine Pump Pit	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.
300-256	306E Fabrication and Testing Laboratory Releases	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.
300-257	309 Process Sewer To River	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.
300-262	Contaminated Soil West of South Process Pond	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.
300-263	324 Building Diversion Tank	Site restricted to industrial land use.	Verification sampling results for aroclor-1260 exceed the residential direct exposures CULs.
300-270	Unplanned Release at 313 Building	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.
300-274	Surface Debris	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.
300-284	Sand Blasting Area Near 3221 Building	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.
300-286	Three 300 Area Potentially Contaminated French Drain/Drywells	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.
303-M SA	303-M Storage Area, 303-M Building Storage Area	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.
303-M UOF	303-M Uranium Oxide Facility	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.
313 ESSP	313 East Side Storage Pad, 313 Building East Site Storage Pad	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.
316-3	307 Disposal Trenches, Process Water Trenches	Site restricted to industrial land use.	Verification sampling results for aroclor-1260 exceed the residential direct exposures CULs.
331 LSLDF	331 LSL Drain Field, 331 Life Sciences Laboratory Drainfield	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.

**Table 6-1. 300-FF-2 Operable Unit Sites with Institutional Controls. (4 Pages)**

<b>WIDS Site Code</b>	<b>WIDS Site Name</b>	<b>Institutional Control</b>	<b>Rationale</b>
333 ESHWSA	333 East Side HWSA, 333 Building East Side Hazardous Waste Storage Area	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.
333 WSTF	333 West Side Tank Farm, 333 West Side Waste Oil Tank, 333 West Side Uranium Bearing Acid Tanks, 333 WSWOT	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.
618-1	Solid Waste Burial Ground No. 1, 318-1, 300 Area Burial Ground No. 1	Site restricted to industrial land use and institutional controls are required to prevent uncontrolled drilling or excavation into deep zone [i.e., below 4.6 m (15 ft)].	The verification sampling does not demonstrate the acceptability of unrestricted access to deep zone.
618-2	Solid Waste Burial Ground No. 2, 318-2	Site restricted to industrial land use and institutional controls are required to prevent uncontrolled drilling or excavation into deep zone [i.e., below 4.6 m (15 ft)].	The verification sampling does not demonstrate the acceptability of unrestricted access to deep zone.
618-3	Solid Waste Burial Ground No. 3, 318-3, Burial Ground #3, Dry Waste Burial Ground No. 3	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.
UPR-300-4	UN-300-4, Contaminated Soil Beneath the 321 Building	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.
UPR-300-7	UN-300-7, Oil Spill at 384 Building	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.
UPR-300-17	UN-300-17, Metal Shavings Fire	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.
UPR-300-38	Soil Contamination Beneath the 313 Building, 313 Slab, Demolished 313 Building Foundation	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.
UPR-300-46	Contamination North of 333 Building	Site restricted to industrial land use.	The site does not meet the RAGs and RAOs for unrestricted land use.

CUL = cleanup level

RAG = remedial action goal

RAO = remedial action objective

WIDS = Waste Information Data System



## 7.0 OPERATIONS AND MAINTENANCE ACTIVITIES

There are no CERCLA site-specific surveillance and maintenance activities associated with the 300-FF-2 OU waste sites. The DOE will retain responsibility for operations and maintenance functions of the 300 Area. These functions and associated landlord responsibilities cover the entire general infrastructure and include such things as access roads, facilities, and services. Monitoring at the Hanford Site is conducted in order to evaluate the performance of the remedies and to identify changes in conditions. In remediated areas, monitoring activities help to verify that the remedies remain effective, resources are protected, and contaminant migration is prevented. This includes DOE's ongoing "landlord" type responsibility for maintaining land use restrictions at those waste sites that met industrial but not unrestricted CULs. Monitoring also helps to facilitate the maintenance of remedy systems in working condition and to keep controls in working order. These activities such as maintaining signs, fences, and restrictions on excavations or land use are often defined in an operations and maintenance plan for a site. For the 300-FF-2 OU waste sites, there are no waste-site specific operations and maintenance activities.

The DOE will continue to be responsible for the following general activities:

- Responding to emergency situations or off-normal conditions such as the deterioration of a physical control beyond predicted levels, an error that results in a "near-miss," or the discovery of previously unidentified sources of contamination.
- Notifying the appropriate regulatory agencies of regulatory threshold exceedances, releases of hazardous substances in excess of quantities reportable under CERCLA, and spills or discharges of hazardous substances or dangerous wastes to the environment.
- Requiring long-term monitoring for source sites where residual contaminants preclude unrestricted use.

Multiple resource management plans have been developed at the Hanford Site to protect and provide the policies, goals, and objectives for the management of the site's biological, natural, and cultural resources. These plans address the ongoing surveillance, protection, and controlled use of the resources and guide the management of resources.

CERCLA 5-year reviews will be required to assess the protectiveness of remedial actions where hazardous substances, pollutants, or contaminants are left onsite above levels that allow for unlimited use and unrestricted exposure. In addition to CERCLA, the Tri-Party Agreement (Ecology et al. 1989) allows 5-year reviews to address regulated RCRA units and past-practice units that are regulated under RCRA and/or CERCLA. Three CERCLA 5-year reviews have been completed at the Hanford Site. The fourth CERCLA 5-year review is scheduled for completion by May 2017.

## **7.1 ENVIRONMENTAL MONITORING**

The 300 Area of the Hanford Site may include significant natural resources including habitat for numerous endangered, protected, and listed species. In addition to the cleanup conducted under CERCLA, environmental monitoring and reporting on the 300-FF-2 OU is conducted annually in accordance with DOE O 231.1B, Admin Change 1, *Environment, Safety, and Health Reporting*. DOE/RL-2014-52, *Hanford Site Environmental Report for Calendar Year 2014*, includes a summary of cleanup performance and compliance relative to applicable federal, state, and local environmental laws and regulations; DOE orders; Secretary of Energy Notices; and DOE Headquarters and site operations office directives, policies, and guidance. It summarizes specific requirements, actions, plans, and schedules identified in the Tri-Party Agreement (Ecology et al. 1989) and other compliance or consent agreements. Although the report is written each year primarily to meet DOE reporting requirements and guidelines, it is also intended to provide a broad spectrum of environmental information to DOE managers, the public, the Tribes, public officials, regulatory agencies, Hanford Site contractors, and elected representatives.

Each annual report provides an overview of activities at the site; demonstrates the status of the site's compliance with applicable federal, state, and local environmental laws and regulations, executive orders, and DOE policies and directives; and summarizes environmental data that characterize Hanford Site environmental management performance. The report also highlights significant environmental and public protection programs and efforts.

The monitoring includes many Hanford Site activities including decommissioning, demolition, remediation, restoration, waste management, closure activities, environmental occurrences, pollution prevention, waste minimization, and monitoring activities for environmental resources. Media included in the monitoring activities are air emissions, facility effluents, surface water, river sediment, drinking water, groundwater, food/farm products, vegetation, fish and wildlife (including threatened and endangered species), radiation, and cultural resources.

## **7.2 GROUNDWATER MONITORING**

Groundwater monitoring at the Hanford Site is guided by DOE/RL-2002-59, *Hanford Site Groundwater Strategy: Protection, Monitoring, and Remediation*, and fulfills requirements for monitoring according to the *Atomic Energy Act of 1954*, RCRA, CERCLA, and WAC 173-303, "Dangerous Waste Regulations." The strategy focuses on protecting groundwater, groundwater monitoring, and groundwater remediation. Sampling and analysis in the 300-FF-5 OU, which is the groundwater beneath the 300-FF-2 OU, is performed according to the *Operation and Maintenance Plan for the 300-FF-5 Operable Unit* (DOE/RL-95-73). Monitoring results are presented in annual Hanford Site groundwater monitoring reports.

Groundwater monitoring is performed in the 300-FF-5 OU by collecting samples from groundwater monitoring wells, near-shore seep water, as well as Columbia River water and biota associated with the river seeps. The remedial action for groundwater includes enhanced attenuation of uranium using sequestration by phosphate application. Monitored natural attenuation is the selected remedy for other COCs: trichloroethene and cis-1,2-dichloroethene at the 300 Area Industrial Complex and tritium and nitrate at the 618-11 Burial Ground.



## 8.0 REFERENCES

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